FULFILLMENT OF EXPECTATIONS FOR CLASSROOM LEADERSHIP AS A PREDICTOR OF STUDENT RATINGS OF COLLEGE TEACHING

By

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DEDICATION

To Sara

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Without the support of Mike McGrath, my friend and confidant, I probably never would have gotten into this business. To him I owe more thanks than he knows.

Without the help and understanding of Dr. Carl Tatum and without the counsel and autonomy given me by my friend and chairman, Dr. Don Avila, I may well have lost all taste for staying in this business. Toward them both I feel a heartfelt gratitude.

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Abstract of Dissertation Presented to the Graduate Council
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It is commonly assumed that student ratings of college teaching reflect the quality of the teacher's instructional performance. In contrast, this study assumed that such ratings are, in large part, a reflection of idiosyncratic student satisfaction with the instructor's leadership behavior.

The small group theory advanced by Stogdill (in Leader Behavior and Group Achievement) suggests that member satisfaction with an aspect of group experience results when the group members' expectations for that particular aspect of the group experience are fulfilled. In consonance with Stogdill's position, this study hypothesized that a member of a classroom group experiences satisfaction with his teacher's instructional behavior (as measured by student ratings of instruction) in proportion to the extent that his expectations for the teacher's leadership behavior (a primary component of instructional behavior) are fulfilled.

Fulfillment of student expectations for teacher leadership was defined as the within factor regressed difference between pre-class (expected teacher behavior) and post-class (observed teacher behavior) forms of an appropriately modified Leader Behavior Description Questionnaire (an instrument composed primarily of two factors--"initiating structure" and "consideration"). Student ratings of college teaching were defined in terms of two student evaluation of teaching instruments which are in current use at the University of Florida. The relationships between the set of predictor variables (fulfillment of expectations for teacher leadership) and the set of criterion variables (student ratings of instruction) were specified in terms of canonical correlation coefficients.

In general, the hypotheses of the study received only limited support. Significant canonical correlations between the set of fulfillment of expectations for teacher leadership variables and the set of student ratings of instruction variables were found in eight of the thirteen largest classes observed (only thirteen of the twenty-two classes observed were large enough to permit the use of a canonical correlation program). Also, a significant canonical correlation of .63 was found between the two sets of variables when all

twenty-two classes (347 students) were treated as one group. These results seemed to indicate that, as suggested by Stogdill's theory, a significant portion of the variance in the student rating of instruction variables could be accounted for by the fulfillment of expectation for teacher leadership predictors.

Unfortunately, however, part of the variance within the "regressed difference" score predictors was contributed by the post-test, and the post-test was completed by the students on the same day as the student ratings of instruction. Thus, there was a question whether student responses on both the post-test and the student ratings (responses which were substantially correlated with each other) were the result of the same response set.

In order to control for this possibility, the regressed difference scores were recalculated using class mean post-test scores. In other words, the regressed difference scores which were originally calculated on the basis of the difference between each student's pre-test and post-test scores were recalculated on the basis of the difference between each student's pre-test score and the mean post-test score of his class. The effect of this revised procedure was to eliminate from the fulfillment of expectations difference-scores, all of the post-test variance.

The canonical correlations between these modified regressed difference scores and the student ratings of instruction were not significant in any of the thirteen largest classes. Within the group of all classes treated as a whole, two statistically significant roots (.01 level) were found. However, their size (.20 and .14) suggested that they were of limited practical significance.

The limitations of the results and suggestions for future research were discussed at length.

CHAPTER I

INTRODUCTION

Need for the Study

Student ratings of college teaching have been a subject of interest to educational researchers for over forty years. Investigators in the area of teacher effectiveness have found the topic one of particular concern. Their numerous studies, however, have produced inconclusive results (Gustad, 1967). For example, Gage (1961) and Lovell and Haner (1955) have reported that instructors of required courses tend to receive lower student ratings of instruction than do instructors of elective courses. In contrast, Heilman and Armentrout (1936) have reported that there are no differences between the ratings given by students taking elective courses and those taking required courses. As another example, Russell (1951) and Russell and Bendig (1953) have reported that overachievers tend to give higher student ratings of instruction than do underachievers while Remmers and Elliott (1949) have reported no differences between the ratings given by these two groups. Yet another example is found in the studies of expected student grades and student ratings of instruction.

Bendig (1953), Blum (1936), Cohen and Humphreys (1960), Eckert (1950), Garverick and Carter (1962), Guthrie (1949, 1954), Heilman and Armentrout (1936), Hudelson (1951), Remmers (1928, 1930, 1939, 1960), Russell (1951), and Voeks and French (1960) have found no significant relationship between expected student grades and student ratings of instruction. In contrast, Anikeef (1953), Caffrey (1969), Echandia (1964), Elliott (1950), Rayder (1968), Rubenstein and Mitchell (1970), Russell and Bendig (1953), Treffinger and Feldhusen (1970), Walker (1969), and Weaver (1960) have reported significant positive correlations between expected student grades and student ratings.

In spite of this ambiguous evidence, there has been a continuing use of these instruments in the evaluation of faculty teaching competence. At least two competing influences have been responsible for this inconsistency. First, there has been apparently no way for faculty members and academic administrators to evaluate their colleagues without at least indirectly questioning their colleagues' professional competence--a stimulus toward the avoidance of student ratings. Second, in recent years there have been widespread demands by students, concerned educators, state legislators, and other interested parties for more effective evaluation of faculty teaching performance--a stimulus toward the use of student ratings. Thus, it seems likely that student ratings have continued to be used, if for no other reason, because they have offered a convenient resolution of these competing forces. Student ratings have evaluated teaching well enough to placate those parties demanding evaluation but not well enough to bring the professional competence of faculty members into serious question.

Since, for the foregoing and other reasons, it appears likely that student ratings of college teaching will continue to be used, this study has been contrived with the aim of bringing about some clarification of their meaning and of suggesting their proper function in the evaluation of college teaching.

Theoretical Orientation

The theoretical orientation of this investigation was drawn from Ralph Stogdill's Individual behavior and group achievement (1959). Stogdill's work is a general theory of task group interaction which attempts to consolidate a great number of empirical findings and smaller group interaction theories into an integrated theory of organizational achievement. Because it deals with a vast range of group variables, most of which are beyond the scope of this paper, a full explication of his position is not made. Instead, only its unique features, those on which the hypotheses of this dissertation were based, are discussed. The reader desiring a discussion of the complete theory is referred to Stogdill (1959).

The feature of Stogdill's theory which found application in the present study deals with the realtionship between group member expectations and group member satisfaction. In brief, Stogdill's theory maintains that the fulfillment of group member expectations leads to group member satisfaction. But it does so with fulfillment of member expectations defined in a unique way. Fulfillment of a member's expectations is defined as the degree of congruence between his expectations for given aspects of the group experience and his perceptions of the actual occurrence of those same aspects of the group experience. What is unique is Stogdill's explicit demarcation between the expectational characteristics (or, simply, expectations) of the individual and the individual's perception of what occurs in the group. This separation makes possible the use of member expectations for the group experience and member perceptions of the group experience as relatively distinct variables which interact to produce member satisfaction. Thus, Stogdill's theory presents a scheme within which it is theoretically possible to predict member satisfaction from the observation of these two variables. This type of prediction was the aim of this study.

Stogdill points out that the relationship between expectations and satisfaction is not direct and uncomplicated. This situation is due, in no small part, to the fact that member satisfaction is a global term. Depending on the member and the type of group, its elements, for example, can include satisfaction with work, satisfaction with financial remuneration, satisfaction with working conditions, satisfaction with co-workers, satisfaction with leadership, and satisfaction with myriad other aspects of the group participation experience. As a consequence, it must be understood that any empirical verification of the general relationship between fulfillment of expectations and member satisfaction must, in practice, be limited to the examination of relationships between variables which share common areas of experience. For example, it is likely that member satisfaction regarding working hours would be strongly related to fulfillment of member expectations regarding working hours. It would be unlikely, however, for satisfaction regarding working hours to be strongly related to fulfillment of member expectations for co-worker cooperation.

One other limitation in the general relationship between fulfillment of expectations and satisfaction concerns the member's estimate of the probability of having his expectations fulfilled. If a group member feels that his expectations have little chance of being fulfilled, his dissatisfaction upon lack of fulfillment will be less than it would have been had he strongly believed that they would be fulfilled. Thus, investigators who attempt to observe the general relationship are likely to detect a strong correlation only if steps have been taken to insure that such low probability expectations are excluded from consideration.

The Problem in Terms of the Theory

McKeachie, Lin, and Mann (1971) have suggested that a primary reason for their findings of low correlations between student ratings of instruction and student achievement is that there can be wide differences among students, and between students and instructors, as to the relative value of various processes and goals of instruction. Thus, modes of instruction which would help some students achieve their personal goals may not be helpful to others, and modes of instruction which would help most students achieve the instructor's goals may not be useful to all students in achieving their personal goals. Translated into the terms of Stogdill's theory, McKeachie, Lin, and Mann seem to be suggesting that students rate the quality of instruction on the basis of whether their personal and idiosyncratic expectations for the classroom experience are being fulfilled.

In accordance with their suggestion, this study construed student ratings of instruction to be a function of varying student characteristics and it sought to understand the relationship between student ratings of instruction and student characteristics by conceptualizing the problem in terms of Stogdill's theory. Specifically, student ratings of college teaching were regarded as an index of student satisfaction with the classroom leadership behavior of the instructor. And, in keeping with Stogdill's theory, it was hypothesized that high student ratings are a product of the fulfillment of student expectations for the instructor's classroom leadership behavior.

It should be noted that this conception of the problem differs from previous approaches in at least one significant regard. As is discussed below in Chapter II, a preponderance of the relevant previous studies have attempted to predict student ratings of instruction with student characteristics alone. This study differs in that it has attempted to predict student ratings with a variable, fulfillment of member expectations, which is defined in terms of the interaction between teacher behavior and student characteristics.

Expectations for and perceptions of group experience, the interactions of which were used by this study as predictors, are, as required by Stogdill's theory, considered to be within the same area of group experience as student ratings of college teaching. Since, as stipulated above, student ratings were regarded as an index of student satisfaction with the instructor's classroom leadership behavior, the measures of both student expectations and perceived teacher behavior were designed to sample the same area of group experience--that of group leadership.

The theoretical limitation which holds that only those expectations which do not have a low probability of fulfillment are related to satisfaction was dealt with in two ways. First, the instructions of the student expectations instrument were worded to encourage students to report realistic, as opposed to idealistic, expectations for teacher behavior (see Appendix B). Second, as will be explained in greater detail below, the expectations instrument was composed of items which tap areas of demonstrated importance in leader behavior. Therefore, it was assumed that at least enough of the items would be of a sufficiently high probability to significantly affect the sum of the items within each factor.

Scope of This Study

This study attempted to bring about some clarification of student ratings of college teaching by translating the question of their meaning into the terms of a theory of small group behavior. Two relevant concomitants of student ratings were identified, the relationships between them were defined in terms of Stodgill's theory, and the hypothesized relationships between these variables and the student ratings were empirically tested. It was intended that confirmation of the theory's predictions would lend support to the particular construction of the problem made by the theory and would further serve as an argument for the use of the theory in the analysis of other problems involving other classroom interactions. It was also intended that confirmation of the theory's predictions would also serve as partial evidence of the construct validity of the student ratings.

Specifically, this study undertook the following tasks:

1. With the aid of Stogdill's small group theory, it delineateated the relationship between two student characteristics and two aspects of teacher behavior;

2. Through the use of these theoretically designated predictor variables, it attempted to predict the variation in student ratings within classes and among classes.

CHAPTER II

REVIEW OF RELATED LITERATURE

The extensive body of literature dealing with the construction, validation, and application of student ratings of college teaching has been recently compiled (December, 1971) in an exhaustive review by Costin, Greenough, and Menges (1971). Much of the present review is based on that exposition.

The portion of the literature dealing with student ratings of instruction which is relevant to the present study is that comprised of the several attempts to validate student ratings of instruction by correlating them with student characteristics, teacher characteristics, and miscellaneous other variables. It is within the limited context of these studies that the present investigation may be most clearly understood.

The preponderance of studies attempting to validate student ratings of instruction have treated student ratings of instruction as chronologically subsequent reflections of teacher or student characteristics. Of this group of studies, about half have used teacher characteristics as predictors and the other half have used student characteristics as predictors. In contrast to these previous studies, the present study used the interaction of student-observed teacher behavior and student characteristics as a predictor of student ratings. In this respect, the present study is unlike any of the previous studies.

Because there are no studies which directly anticipate the hypotheses of the present paper, the literature reviewed was selected on the basis of its relevance to the broad question of how student characteristics have been found to be related to student ratings of instruction. It should be noted, however, that since the literature related to this broad topic went well beyond the scope of the present hypotheses, this review was limited to a summation of this extensive material. Rather than offering a detailed discussion of the available literature, this review was intended as an overview which would convey to the reader the flavor of the reported findings.

Related Literature

Numerous studies have reported on the relationships between student ratings of instruction and various student demographic characteristics. Classifying student ratings on the basis of the respondents' sex, numerous investigators have found no significant differences between males and females in several types of ratings (Bendig, 1953; Caffrey, 1969; Downie, 1952; Elliott, 1950; Heilman and Armentrout, 1936; Lovell and Haner, 1955; Remmers, 1939). There is, however, some evidence of interaction between the sex of the student rater and the sex of the instructor. Both Walker (1969) and Bendig (1952) have found that female students are inclined to differentiate between male and female instructors, with female instructors as the beneficiaries of their preferences.

Another traditional comparison is that of graduate versus undergraduate students. Guthrie (1954), Heilman and Armentrout (1936), Stewart and Malpass (1966), and Rayder (1968) have found in the ratings given by students of graduate and undergraduate classifications. In contrast, Remmers and Elliott (1949) have found that graduate students assigned higher ratings than do undergraduate students. Also, several investigators have found that upper division undergraduate students tend to give higher ratings than do lower division undergraduate students (Clark and Keller, 1954; Downie, 1952; Gage, 1961; Lovell and Haner, 1955).

There is also conflicting evidence as to whether there are differences between the ratings given by students taking courses on a required basis and those taking courses on an elective basis. Cohen and Humphreys (1960) have reported that students taking a psychology course on a required basis tend to give lower ratings than students taking the same course on an elective basis. Congruent with the Cohen and Humphreys (1960) findings are the results reported by Gage (1961) and Lovell and Haner (1955). Both of these studies report that teachers of required courses tend to receive significantly lower ratings than do teachers of elective courses. On the other hand, Heilman and Armentrout (1936) have found no differences between the ratings of students taking required courses and those taking elective courses.

Another demographic variable of interest, the students major subject area, seems to be uncorrelated with student ratings. Cohen and Humphreys (1960), for example, have reported that psychology majors tended to rate instruction in a psychology course about the same as non-psychology majors.

The predictive power of student personality and intellectual characteristics has been investigated by several researchers. McKeachie (1969), Mann (1969), and Elliott (1950) have found that students who scored high in the area of "critical thinking" tended to rate their teachers high on various types of ratings. In particular, these students tended to rate their instructors high on stimulation of curiosity, attention to student reactions, rapport, permissiveness, and flexibility. In a recent study with congruent findings, McKeachie, Lin, and Mann (1971) reported that teachers whose students rated them high in "rapport" tended to have students who performed well in the area of "critical thinking" (Costin, Greenough, and Menges, 1971).

Only one study has reported the use of student personality characteristics as a predictor of student ratings of instruction. Yonge and Sassenrath (1968) have found that self-reported student personality characteristics and student ratings of instruction are correlated within classes but that the observed correlations do not hold from instructor to instructor. They have concluded that ratings of instruction have different meanings from instructor to instructor because of the differences among instructors in teaching methods and, ultimately, because of the differences in the reactions of various student personalities to these differing methods.

There is conflicting evidence as to the value of student performance characteristics as predictors of student ratings of instruction. Russell (1951) and Russell and

Bendig (1953) have found that overachievers tend to rate courses higher than do underachievers. However, the relationship was not entirely clear in that the observed correlations were small and the relationship was not found to extend to specific teacher skills taken separately (Costin, Greenough, and Menges, 1971). In contrast, Remmers and Elliott (1949) have found no differences between the ratings given by overachievers and underachievers.

The studies having the most direct relationship to the present study are those attempting to correlate student expectations for grades with student ratings of instruction. Numerous studies have found no relationship between expected grades and/or received grades and student ratings of instruction (studies using received grades are included here in that a strong relationship has been observed between expacted and received grades; Blum, 1936; and Walsh, 1967). These studies include Bendig (1953), Blum (1936), Cohen and Humphreys (1960), Eckert (1950), Garverick and Carter (1962), Guthrie (1949, 1954), Heilman and Armentrout (1936), Hudelson (1951), Remmers (1928, 1930, 1939, 1960), Russell (1951), and Voeks and French (1960).

In contrast to the findings of these studies, a sizable number of studies have reported significant positive correlations between student grades and student ratings of instruction. These studies include Anikeef (1953), Caffrey (1969), Echandia (1964), Elliott (1950), Rayder (1968), Rebenstein and Mitchell (1970), Russell and Bendig (1953), Treffinger and Feldhusen (1970), Walker (1969), and Weaver (1960). It should be noted, however, that in these latter studies the correlations reported were typically small. For example, the large study by Spencer (1968) reported correlations of approximately .30 between grades and ratings of the "overall value of course."

Discussion of the Literature

Taken as a whole, the outstanding characteristic of the studies under discussion is their lack of agreement as to the relationships between student characteristics and student ratings of instruction. The inconclusiveness of the reported research is particularly apparent in the areas where there have been a fairly large number of studies reported.

There are many possible causes for these conflicting results; such as, dissimilar samples, dissimilar instruments, dissimilar experimental procedures, etc., and there can be little doubt that these causes have played an important role in production of these conflicting results. It was, however, the position of this investigation that most of these studies would have produced conflicting results even without these problems because they have, in the main, overlooked the question of how various student characteristics might interact with varying modes of teacher behavior. In other words, consistent relationships were not found because researchers did not control for the possibility that a given student characteristic might account for a large portion of the variance in one instructor's ratings but not in another's.

Actually, researchers have not been completely unaware of this possibility. In fact, this type of interaction has been explicitly suggested by Yonge and Sassenrath (1968) who found various student personality characteristics were correlated with student ratings in some classes but not in others. As mentioned above, McKeachie, Lin and Mann (1971) have also suggested much the same thing.

There is at least one other explanation of the conflicting results which have been reported. It may be that many of the variables which have been and which are being studied have not correlated with student ratings of instruction simply because they are theoretically and empirically irrelevant. But it was the position of this study that the predictive relevance of these variables will remain indeterminate until studies using some form of experimental or statistical control for the variable of teacher behavior are implemented.

In summary, this investigation identified a weakness in previous studies which had apparently contributed to the inconsistent findings which have been reported. It was the aim of the present study to avoid this weakness by controlling for the interaction between the observed student characteristics and the various modes of teacher behavior. Stogdill's theory of small group behavior was used as the conceptual basis for a correlational design which would hopefully effect the necessary control.

CHAPTER III

DESIGN OF THE STUDY

Definitions

The aim of this study was to ascertain the nature of student ratings of college teaching by translating the question of their meaning into the terms of Stogdill's small group theory. As a first step of translation, two student expectational characteristics were defined, and their relationships with their teacher behavior counterparts and with student ratings of instruction were delineated in terms of Stogdill's theory. Also, student ratings of college teaching were defined in terms of two instruments which are in current use at the University of Florida.

Student expectations for teacher leadership behavior were defined in terms of an appropriate modification of the Leader Behavior Description Questionnaire (LBDQ). See Appendix A; Hemphill and Coons, 1957. This modification, called the Student Expectations Questionnaire (SEQ; see Appendix B), is regarded as being comprised of two factors: expected "initiating structure" (EI) and expected "consideration" (EC). As will be amplified in the discussion below, both "initiating structure" and "consideration" have been consistently found in factor analyses of LBDQ responses drawn from widely varying groups. Thus, the present study contended that since both of these factors are known to be significant components of leadership behavior in other groups, they are also likely to be significant components of expected and observed teacher leadership behavior as seen in classroom groups.

Student perceptions of teacher leadership behavior were similarly defined in terms of the LBDQ. This instrument is called the Teacher Behavior Questionnaire (TBQ). See Appendix B. The TBQ is considered to be comprised of the same two LBDQ factors described above. They are called observed teacher "initiating structure" behavior (OI) and observed teacher "consideration" behavior (OC).

Fulfillment of expectations for "initiating structure" and "consideration" (the derived variables which were used as the predictors of student ratings) were defined in the following ways. Fulfillment of expectations for "initiating structure" was defined as the absolute value of the regressed difference between each student's expected initiating structure score and observed initiating structure score--called Regressed Initiating Structure (RI). Fulfillment of expectations for "consideration" was defined as the absolute value of the regressed difference between each student's expected consideration score and observed consideration score--called Regressed Consideration (RC).

As stated above, this study treated student ratings of college teaching as an index of student satisfaction with teacher leadership behavior. Specifically, student satisfaction with teacher leadership behavior was defined in terms of two currently used student rating instruments. The more psychometrically elaborate of the two, the Student Student Evaluation of Teacher Behaviors Instrument (TBI; Bridges, Greenwood, and Ware, 1971), is comprised of eight factors: "openness" (TO), "teaching style" (TS), "evaluation" (TV), "effectiveness of presentation" (TP, "knowledge of content" (TK), "communication skills" (TC), "commitment to teaching" (TT), and "teaching enthusiasm" (TE), and a single-item general rating of the instructor (TG). The other instrument, the Student Report on Classroom Teaching Instrument (CEI, no date), is considered to be composed of two sub-scores. One is a total rating, the mean of eleven diverse items (CT); the other is a single-item global rating of teaching ability (CG).

Hypotheses

Through the use of selected multivariate statistics, this study attempted to predict a significant portion of the variance in the above defined set of student ratings of college teaching. The variables, fulfillment of student expectations for "initiating structure" and "consideration," as defined above, were used as predictor variables. The following hypotheses were tested:

1. Within each class, the canonical correlations between the set of predictor variables (RI and RC) and the set of student ratings of instruction (the nine scores of the TBI and the two scores of the CEI) will be equal to zero;
2. Across the several classes observed, the canonical correlations between the set of predictor variables for all students (RI and RC) and the set of student ratings of instruction for all students (the nine scores of the ETB and the two scores of the CEI) will be equal to zero.

Sample

The population from which the observed sample was drawn is comprised of those students attending classes in the University of Florida College of Education during the spring, 1972 quarter. Twenty-three classes with twenty-one different instructors were observed. Because of the sensitive nature of student ratings of college teaching, the sample classes included only those classes whose instructors agreed to participate in this study. For this reason the representativeness of the sample cannot be assured. However, there is little reason to believe that the sample was biased in that the instructors who were asked to participate were selected on a random basis and all who were asked did participate. On the other hand, two classes which participated in the early part of the study were dropped from the sample, one because the instructor felt that she could not afford to lose the class time that was needed for the second day's data collection and the other because only one participating student attended class on the second day of data collection. In the latter case, however, the instructor was one of the two instructors with two classes participating in the study. Thus, this instructor was not selectively excluded from the sample.

Instruments

Student Expectation and Teacher Behavior Instruments--Both the Student Expectation Questionnaire (SEQ) and the Teacher Behavior Questionnaire (TBQ) are modifications of Hemphill and Coons' (1957) Leader Behavior Description Questionnaire (LBDQ). The LBDQ was originally developed by Hemphill and Coons as a part of the Ohio State Leadership Studies. An early modification of the instrument, the one from which the present instruments were drawn, was designed to measure the leader behavior of military task group leaders (Halpin and Winer, 1957). This early instrument and its factor loadings are presented in Appendix A. Later forms were applied to diverse business, military, industrial, and school groups. Most of the school applications, the ones which would seem to be of particular relevance to the present study, have dealt primarily with the leadership behavior of school principals as observed by teachers. There was, however, one application of the LBDQ to the problem of measuring teacher classroom behavior. Gibb (1955) developed an instrument called the Teacher Behavior Description Questionnaire which was derived directly from Hemphill's early studies of airplane crew commanders (Hemphill, Halpin, and Winer, 1952). Unfortunately, Gibb's 165-item instrument was never published in its entirety.

A significant characteristic of the LBDQ is the remarkable consistency with which two factors, "initiating structure" and "consideration," have been observed in factor analytic studies of the instrument (Brown, 1967). They have been observed across studies of both various types of groups and various types of leaders. It was on the basis of this indirect evidence that the items of the present SEQ and TBQ were assumed to measure significant aspects of the teacher's leader behavior. It was also on the basis of this evidence that the items comprising the EI, EC, OI, and OC "factors" were selected and were assumed to be the classroom counterparts of "initiating structure" and "consideration" within the present instruments (see Appendix B). In short, it was maintained that the SEQ and the TBQ were appropriate for the purposes of this study in the sense that they could reasonably be assumed to measure student attitudes and teacher behaviors which are theoretically significant components of the classroom social system.

It is, of course, true that these assumptions could have been tested through factor analyses of the SEQ and TBQ. However, this procedure was not used for two reasons. First, the internal consistency of the presumed EI, EC, OI, and OC factors could be adequately estimated for the exploratory purposes of the present study through an item analysis of each factor. Second, the development of instruments on the basis of factor analysis is not recommended by some authorities in the area of test construction (Nunnally, 1967). Rather, the development of items consistent with a systematic rationale seems to be preferred.

The first sets of SEQ and TBQ items were drawn by the present author from Halpin and Winer's factors (see Appendix A), and were tested in several University of Florida classes during the winter, 1972 quarter. Students were asked to complete both instruments and to write on their answer sheets any comments they had regarding the quality of the items, the quality of the instructions, or the quality of any other aspect of the instruments. This information was used to make the additional modifications in the items, the format, and the instructions which have resulted in the present instruments (see Appendix B).*

The present data have indicated that the four factors of the SEQ and TBQ are both reliable and internally consistent. Veldman's (1967) TESTAT program was used to compute Cronbach's coefficient alpha (Nunnally, 1967) and item-total correlations for the items of each factor. These data are presented in Table I and they seem to provide support for the argument that the four factors as modified from the Leader Behavior Description Questionnaire are internally consistent and are meaningful to students in the classroom setting.

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*A two-item addition placed at the bottom of the SEQ asks students if they have had previous classes with the instructor or if they have knowledge of how he teaches his classes. These items are treated as demographic control data. Classification of the present data on the basis of these items is included in Appendix J.

TABLE I

ITEM-TOTAL CORRELATIONS AND RELIABILITIES OF THE SEQ AND TBQ "FACTORS"

	SEQ "Factor"		TBQ "Factor"	
Item Number	EC	EI	OC	OI
1	.46		.57	
2		.27		.21
3	.69		.76	
4		.22		.39
5	.60		.65	
6		.41		.15
7	.52		.76	
8		.38		.48
9	.63		.71	
10		.16		.30
11	.70		.79	
12		.43		.48
13	.50		.64	
14		.38		.43
15	.47		.44	
16		.51		.63
17	.65		.67	
18		.60		.60
19	.55		.75	
20		.50		.42
21	.61		.77	
22		.44		.50
23	.73		.81	
24		.54		.56
25	.72		.83	
26		.42		.51
27	.66		.75	
28		.49		.63
29	.66		.66	
30		.55		.62
N	347	347	347	347
$\bar{X}$	36.76	44.40	34.78	53.14
S.D.	10.14	7.49	14.78	11.75
Coefficient Alpha	.87	.65	.92	.74

Student Evaluation of College Teaching Instruments.--
The Student Evaluation of Teacher Behavior instrument (TBI; see Appendix C), which was developed by Bridges, Greenwood, and Ware (1971) at the University of Florida, has been factor analyzed into eight factors: "openness" (TO), "teaching style" (TS), "evaluation" (TV), "effectiveness of presentation" (TP), "knowledge of content" (TK), "communication skills" (TC), "commitment to teaching" (TT), and "teaching enthusiasm" (TE). Multiple regression techniques have been used to combine these factors into an equation which successfully predicts a single item over-all student rating of the instructor's performance (TG). Table II presents each factor's reliability and item-subscale correlations as estimated from the present data. A complete breakdown of the factors showing their regression weights is presented in Appendix C.

The Student Report on Classroom Teaching instrument (CEI, no date) was developed by a faculty committee at the University of Florida. Most of the items were drawn from a teacher evaluation instrument which was developed at Purdue University.* The CEI produces two scores, one is based on a single-item general rating of instruction (CT) and the

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*C. Bridges, personal communication.

TABLE II

ITEM-TOTAL CORRELATIONS AND RELIABILITIES OF THE TBI SUBSCORES

Item Number	Factors								
	TO	TS	TV	TP	TK	TC	TT	TE	TG
1	.47								
2			.44						
3				.60					
4						.63			
5						.43			
6					.42				
7							.64		
8							.65		
9	.19								
10		.02							
11					.72				
12		.39							
13					.41				
14					.50				
15			.60						
16		.43							
17	.40								
18						.45			
19					.73				
20				.39					
21				.51					
22				.45					
23	.47								
24	.36								
25	.40								
26	.34								
27				.55					
28								.66	
29	.55								
30						.59			
31	.48								
32								.68	
33			.34						
34			.59						
35	.47								
36				.18					
37			.41						
38		.60							

TABLE II (Continued)

Item Number	TO	TS	TV	TP	TK	TC	TT	TE	TG
39			.50						
40								.71	
41		.57							
42	.40								
43			.43						
44							.58		
45							.55		
46		.63							
47	.45								
48								.66	
49	.42								
50						.55			
51		.42							
52	.39								
53			.65						
54		.61							
55			.68						
56				.60					
57							.12		
58		.38							
59				.30					
60		.50							
61									1.00
N	347	347	347	347	347	347	347	347	347
$\overline{X}$	94.17	85.42	87.49	89.80	86.92	90.08	81.46	92.38	3.30
S.D.	12.78	22.79	19.12	19.37	23.94	20.00	30.59	18.71	2.41
Coefficient Alpha	0.60	0.57	0.64	0.44	0.49	0.34	0.23	0.60	0.00

other is the average of the remaining eleven items in the instrument (CG). The reliability of the eleven-item subscore and its item-total correlations are presented in Table III. The CEI is presented in Appendix D.

The CEI also requests demographic information regarding the student's college standing, undergraduate G.P.A., estimated grade in present course, college of enrollment, sex, and reason for taking the course (see Appendix D).

Scoring of the Instruments

The data were punched on standard data cards and the instruments were scored by FORTRAN computer programs. The lists of these programs in Appendix E offer a detailed presentation of the scoring procedures. The following is a summary of those procedures.

The SEQ and TBQ are each composed of two fifteen-item factors (EC, EI, and OC, OI respectively). On the SEQ, students were asked to indicate their expectations for the frequency with which they expected to see each of the teacher behavior items by circling a number from one to seven--one indicating "always" and seven indicating "never." On the TBQ, students were asked to use the same scale to indicate the frequency with which the teacher actually engaged in these same teacher behaviors (see Appendix B for

TABLE III

ITEM-TOTAL CORRELATIONS AND RELIABILITIES
OF THE CEI SUBSCORES

Item Number	CG	CT
1	1.00	
2		.61
3		.72
4		.59
5		.65
6		.59
7		.68
8		.65
9		.67
10		.57
11		.62
12		.55
N	347	347
$\bar{X}$	2.41	24.42
S.D.	1.15	8.55
Coefficient Alpha	0.00	.83

complete instructions). The SEQ and the TBQ scores were computed with program PSEQTBQ (see Appendix E):

1. Across subject means (within each class) were substituted for all missing data values;

2. The raw data, with missing values substituted, were punched for use in Veldman's (1967) TESTAT--a reliability and item-analysis program;

3. Items 9, 13, 15, and 17 of the EC and OC scales were scored in reverse in accordance with their factor loadings from Halpin and Weiner's (1957) original study. The same procedure was used for item 14 of the EI and OI scales;

4. The items comprising each "factor" were summed into scale totals and punched for further analysis.

The TBI is composed of eight multi-item factors totaling sixty items and a single-item general rating. The student was instructed to read each item and to respond by (1) leaving it blank, meaning that the behavior described was irrelevant, by (2) circling a one, meaning that the item was relevant and was descriptive of the instructor being evaluated, or by (3) circling a two, meaning that the behavior was relevant to the class but did not describe the instructor in question (see Appendix C for the complete instructions). The TBI was scored with program PTBI (see Appendix E):

1. The score of each factor for each student was computed by dividing the total weights

of all positively weighted items marked with a one (a one indicating that the item described the instructor's behavior) by the total weights of all positively weighted items marked with a one, plus the absolute value of the total of all negatively weighted items marked with a two (a two indicating that the item did not describe the instructor's behavior). This ratio was multiplied by 100 producing scores ranging from 0 to 100 for each factor.*

2. Class averages were substituted for missing values of the single-item general rating.
3. The eight-factor scores and the single-item general rating were punched for further analysis.

The CEI is composed of eleven specific items and one general evaluation item to which students were asked to respond. There were five response options on the one-item general rating and either six or seven options on each of the eleven specific ratings (one option for each of the eleven specific ratings was a not-applicable response). The options, which varied in wording from item to item, are presented in Appendix D. The CEI was scored with Program PCEI (see Appendix E):

1. Across subject averages (excluding not applicable responses) were substituted for missing values on all twelve items;
2. The raw data with missing values substituted were punched for further analysis;

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*C. Bridges, personal communication.

3. A weighted mean of items two through twelve, excluding the not-applicable responses, was computed for each student. The items having six options (excluding the not-applicable option) were given an appropriate fractional weight in order to avoid the disproportional influence they would otherwise have had in the average;

4. Item one (the single-item general rating) and the weighted mean of items two through twelve were punched for further analysis.

Data Collection Procedures

The data were collected during two regular class periods. The first of these was the first day of class before any of the class members had seen their instructor.* At this time students were asked to respond to the Student Expectation Questionnaire. Also, they were told that additional data would be collected around the end of the quarter. Nothing was said regarding the relationship of the SEQ to the student evaluation of teaching instruments. The total class time used was less than ten minutes per class.

In order that the SEQ, TBQ, and evaluation of teaching instruments might be matched in the correlational analysis, each student was asked to put some identifying mark in the upper right-hand corner of the SEQ instrument which he completed (see Appendix F for the student's instructions). This identifying mark was one which each student alone could recognize as his or her own. When the proctor returned, around the end of the quarter, each of the (SEQ) instruments from the first session were displayed individually before the class and each student was asked to identify his personal mark (this process was intended to remind each student of his mark). With the use of this procedure, almost all of the students had no trouble with recalling and using the same identifying mark on the instruments given the second day. Thus, the instruments completed by each student were identified and matched without a violation of student anonymity.

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*This condition was not adhered to in the case of one class. However, subsequent inspection of the data did not indicate that the variance of expectations in this class was significantly different from other classes. Also, two questions were placed at the end of the SEQ in an attempt to control the effect of prior acquaintance with the instructor on student expectations (see Appendix B).

The second day of data collection was a date close to the end of the quarter which was convenient for the instructor. On this day the TBQ, TBI, and CEI were administered in the following order (see Appendix G for the proctor's instructions). First, all students in each class were shown the SEQ forms from the first day of class. Second, each student who recognized his identifying mark was asked to respond to the TBQ and to again use his identifying mark. Third, while the above-designated group filled out the TBQ, all other students were given the TBI and the CEI along with a note instructing them to answer all questions and to leave the room when finished (see Appendix H, Note number 1). Fourth, the first group of students were asked to come forward to receive additional instructions once they had completed the TBQ. At this time they were given the TBI and the CEI along with a note instructing them to complete all questions and to mark each answer sheet with their identifying mark (see Appendix H, Note number 2). Note that these written instructions were the first indication given the students regarding the association between the SEQ, TBQ, and the evaluation of teaching instruments. Thus, there was an attempt to prevent student response from being affected by anticipation of the data collection procedures. The total class time used for this procedure was close to 45 minutes per class.

The process of data collection, as outlined above, was first tested in a pilot study. As was noted above, the primary aim of this pilot study was to obtain student reaction to the instruments and to identify any outstanding difficulties in the data collection process.

Statistical Design

The statistical analysis of the data was accomplished primarily through the use of the University of Florida IBM

360/60 computer. The programs used were selected from those described in Dixon's (1971) BMD Biomedical computer programs and Veldman's (1967) FORTRAN programming for the behavioral sciences. All raw data were keypunched and summarized as a first step of this analysis. The following presentation is an outline of the statistical procedures used.

Analysis of Instruments.--The means and standard deviations of all measures by class groups were produced. Also, the means and variance of all measures were produced on the basis of the following classifications: current college class, overall undergraduate grade point average, estimated grade in course, major area of study, sex, reason for taking course, and knowledge of the instructor's teaching methods (see Appendix J).

Veldman's TESTAT was used to calculate Cronbach's coefficient alpha (Nunnally, 1967) as an index of the reliability of each factor and each subscore within each test. Coefficient alpha is an estimate of the correlation between the sample of items used in each measure and a hypothetical alternate form.

Veldman's TESTAT was also used to produce an item by item analysis of internal consistency for all factors and subscores of all the instruments used. This analysis was expressed in terms of item-total correlations.

Biomedical program BMD 05D (Dixon, 1971) was used to produce histograms for all sets of data. This same program was also used to produce scatterplots of the correlated variables. These data were intended to provide a simple way of inspecting the various data distributions for normality.

Generation of Derived Scores.--Fulfillment of student expectations, the measure of interaction between student expectational characteristics and observed teacher behavior, was computed by taking the absolute value of the regressed difference between EI and OI, and EC and OC, for each student. Brown's (1970) Regressed Gain Program (see Appendix I) was used for this procedure. This particular derived score was used in order to avoid the statistical regression bias ordinarily present in difference scores (Tracy and Rankin, 1967). The effect of a regression artifact would have been to make subjects with extreme SEQ scores more likely to have large difference scores.

Tests of Hypotheses.--Since all of the hypothesized relationships contained more than one predictor variable and more than one criterion variable, canonical correlation was used to estimate the relationships between each set. Specifically, the calculations were made on the University of Florida IBM 360/60 computer using Veldman's CANONA program (Veldman, 1967). The following canonical relationships were computed and their corresponding null hypotheses were tested with the chi-square statistic recommended by Cooley and Lohnes (1971).

1. Within each class the canonical correlation between the set of predictor variables, composed of RI and RC, and the set of student ratings, composed of TO, TS, TV, TP, TK, TC, TT, TE, TG, CT, and CG, is greater than zero.

2. Across the several classes observed, the canonical correlation between the set of predictor variables, comprised of RI and RC, and the set of student ratings, comprised of TO, TS, TV, TP, TK, TC, TT, TE, TG, CT, and CG, is greater than zero.

CHAPTER IV

RESULTS, DISCUSSION, CONCLUSIONS, AND SUGGESTIONS FOR FUTURE RESEARCH

Results

Table IV presents the number of subjects, the means, and the standard deviations for all variables within each class. The classes are identified as graduate or undergraduate according to their course number.

The first null hypothesis of the present study was that there would be no canonical correlations significantly greater than zero between the set of predictor variables, fulfillment of expectations for "initiating structure" and "consideration," and the set of student ratings of instruction within any of the classes observed. This hypothesis was not tested in every class because the number of subjects in several of the classes was too small for analysis by the CANONA program (Veldman, 1967). Thus, the first hypothesis was tested in thirteen of the twenty-one classes from which complete sets of data were collected. Table V presents the canonical roots, chi-square values, and the correlations between the canonical roots and each variable for each of

TABLE IV

MEANS AND STANDARD DEVIATIONS FOR ALL VARIABLES WITHIN EACH CLASS

Class #	G* or U*	N		EC	EI	OC	OI	RC	RI	TO	TS	TU	TP	TK	TC	TT	TE	TG	CG	CT
			$\bar{X}$	40.88	41.12	38.65	49.47	7.87	7.54	88.49	80.52	83.81	90.29	86.56	96.88	89.79	92.86	2.65	2.29	2.02
02	G	17	S.D.	10.88	9.96	11.68	9.75	9.02	7.37	15.34	22.39	19.59	18.07	21.57	7.50	13.24	13.80	1.49	0.95	0.69
			$\bar{X}$	32.11	43.42	50.50	53.77	19.78	11.02	87.06	64.40	85.19	84.64	64.47	85.18	57.42	95.09	5.46	3.85	2.72
03	G	26	S.D.	8.89	6.99	21.42	13.46	18.93	6.83	17.43	72.88	14.73	21.32	32.31	24.04	36.16	10.65	2.62	1.03	0.80
			$\bar{X}$	46.25	50.00	41.50	51.00	4.66	4.80	96.10	94.50	97.32	86.87	89.67	94.10	99.25	100.00	1.50	2.00	1.82
04	G	4	S.D.	5.02	4.85	1.66	3.61	1.84	2.02	7.67	8.44	5.15	26.25	12.29	8.69	1.50	0.00	0.58	0.82	0.21
			$\bar{X}$	43.71	45.14	40.57	50.14	4.55	4.39	95.31	87.64	95.21	67.31	96.71	89.09	58.46	96.30	2.00	2.57	1.70
05	U	7	S.D.	8.31	8.51	7.09	3.48	7.17	1.99	11.23	14.94	8.17	37.49	6.48	20.99	45.36	9.79	1.41	0.98	0.27
			$\bar{X}$	39.23	46.14	52.41	49.04	21.67	10.63	75.72	50.23	86.60	72.59	69.09	83.36	57.12	83.00	6.04	3.68	2.67
06	G	22	S.D.	8.90	8.87	20.24	13.24	15.29	7.51	23.72	36.60	10.67	29.23	35.26	26.50	38.77	16.68	2.70	0.97	0.81
			$\bar{X}$	36.37	41.81	29.50	47.25	8.25	9.21	93.57	99.14	98.52	95.63	98.03	93.21	93.78	95.79	1.62	1.81	1.64
07	G	16	S.D.	6.48	5.83	7.80	10.80	3.83	4.20	11.47	2.41	4.27	11.52	4.75	7.83	12.70	11.92	0.78	0.81	0.44
			$\bar{X}$	40.17	43.65	33.00	53.87	9.22	9.54	99.19	96.24	85.35	95.84	89.96	99.12	95.66	96.84	2.52	1.74	1.82
08	U	23	S.D.	9.16	8.13	10.57	11.49	5.38	6.64	2.55	5.99	19.75	14.20	20.00	3.09	15.39	9.28	1.79	0.89	0.57
			$\bar{X}$	29.50	46.17	24.50	49.17	8.48	7.73	99.95	100.00	95.05	100.00	100.00	97.63	99.50	100.00	1.33	1.33	1.42
09	U	6	S.D.	4.42	6.26	5.28	2.47	5.58	3.11	0.13	0.0	10.41	0.0	0.0	5.80	1.22	0.0	0.52	0.82	0.33
			$\bar{X}$	34.56	45.22	23.22	45.67	11.22	8.47	99.94	100.00	97.17	100.00	100.00	99.20	98.67	93.51	1.67	1.44	1.46
10	G	9	S.D.	8.07	5.83	6.16	7.16	4.76	6.81	0.13	0.0	8.50	0.0	0.0	12.33	1.58	19.47	0.71	1.01	0.51
			$\bar{X}$	39.06	46.16	32.87	53.09	8.26	7.52	98.49	79.46	82.31	96.25	88.17	96.71	94.93	95.29	2.94	2.03	2.04
11	U	32	S.D.	11.10	5.94	10.08	9.73	5.59	5.90	3.23	20.72	20.62	7.10	20.38	10.59	15.18	12.94	1.69	0.92	0.51
			$\bar{X}$	30.79	43.46	25.67	51.37	9.54	6.65	98.18	95.36	96.44	94.30	88.42	69.59	59.37	98.74	2.75	1.83	1.60
12	U	24	S.D.	7.03	7.71	7.98	9.97	4.66	4.95	2.64	9.21	8.09	11.72	23.07	19.13	37.08	4.59	2.65	0.90	0.38
			$\bar{X}$	34.33	42.00	31.89	49.00	7.27	3.71	99.28	98.79	96.55	99.22	100.00	90.88	93.73	92.51	1.89	1.89	1.42
13	G	9	S.D.	13.70	6.81	10.15	4.67	4.24	2.83	1.33	3.63	6.87	1.23	0.0	16.85	11.41	16.03	0.78	0.78	0.28

TABLE IV (Continued)

Class #	G* or U*	N		EC	EI	OC	OI	RC	RI	TO	TS	TU	TP	TK	TC	TT	TE	TG	CG	CT
			$\overline{X}$	34.62	47.28	42.24	60.00	14.55	9.81	91.55	75.27	88.90	71.10	88.86	45.99	77.99	69.16	3.95	2.76	2.29
14	U	21	S.D.	11.33	8.12	17.65	10.85	13.26	7.28	15.85	26.75	12.65	32.43	20.16	34.49	30.00	30.26	2.50	1.27	0.65
			$\overline{X}$	40.17	45.50	47.67	52.17	15.54	5.52	89.00	95.02	58.47	80.85	65.25	91.23	82.83	98.67	4.67	3.33	2.69
15	U	6	S.D.	10.29	4.82	14.15	5.81	10.56	3.44	21.97	4.27	35.04	25.23	39.19	21.47	28.63	2.68	2.42	1.21	0.72
			$\overline{X}$	34.00	45.23	27.29	56.06	11.32	8.79	99.65	97.08	70.14	88.17	86.89	95.35	95.56	93.60	2.71	2.12	2.07
16	U	17	S.D.	10.64	7.80	11.84	11.64	5.95	5.81	0.87	5.97	23.70	18.81	14.68	9.49	11.01	19.53	1.60	0.83	0.58
			$\overline{X}$	40.10	40.90	32.85	55.30	5.36	10.50	95.22	62.75	75.89	84.94	96.54	97.87	72.29	94.87	3.40	2.30	2.21
17	U	20	S.D.	12.17	6.22	7.67	12.97	4.52	7.51	10.75	21.91	29.90	15.56	7.59	5.07	34.48	15.13	2.76	1.27	0.78
			$\overline{X}$	36.79	47.68	26.63	51.37	9.44	6.73	96.59	97.16	83.49	93.37	92.27	90.61	99.53	94.44	3.05	2.47	2.17
18	U	19	S.D.	10.21	7.06	6.51	9.51	5.39	5.07	8.05	3.24	25.07	9.49	18.47	12.60	1.09	19.48	2.01	0.88	0.67
			$\overline{X}$	38.17	45.13	28.90	64.97	7.47	12.39	98.61	97.13	90.83	97.18	89.73	94.84	95.70	96.50	2.57	2.33	1.81
19	G	30	S.D.	8.04	5.33	7.16	10.08	5.05	8.09	4.38	4.58	14.04	5.19	22.21	7.80	14.87	14.14	1.84	0.94	0.49
			$\overline{X}$	37.10	44.95	30.47	55.58	8.72	9.49	95.55	84.91	94.44	93.37	86.33	96.30	46.82	92.44	3.95	2.68	1.99
20	U	19	S.D.	9.98	7.33	9.71	10.92	6.00	7.11	9.59	22.98	8.73	14.88	28.37	7.30	36.02	22.75	2.50	1.17	0.77
			$\overline{X}$	34.50	40.80	31.20	44.00	9.90	11.57	94.07	87.92	94.81	95.50	76.71	92.90	88.48	68.25	4.90	3.10	1.97
21	U	10	S.D.	7.38	6.91	10.82	9.37	6.43	4.79	10.18	9.98	10.94	8.52	27.55	8.45	19.14	42.62	2.42	1.29	0.64
			$\overline{X}$	33.80	41.70	39.70	44.10	8.07	8.90	90.94	77.25	97.12	94.52	95.97	90.64	95.10	99.10	3.80	2.80	2.00
22	G	10	S.D.	7.09	6.18	10.49	7.57	7.62	6.99	8.31	26.31	7.43	8.51	7.13	9.30	10.33	2.85	1.75	0.79	0.55
All			$\overline{X}$	36.76	44.40	34.78	53.14	10.60	8.94	94.17	85.42	87.49	89.80	86.92	90.08	81.46	92.38	3.30	2.41	2.03
Classes		347	S.D.	10.14	7.49	14.78	11.75	10.00	6.67	12.78	22.79	19.12	15.37	23.94	20.00	30.59	18.71	2.41	1.15	0.71

* G = Graduate; U = Undergraduate.

TABLE V

CANONICAL ROOTS AND ROOT-VARIABLE CORRELATIONS FOR THE THIRTEEN LARGEST CLASSES USING REGRESSED DIFFERENCE SCORES

Class		Root															
#	N	#	R_c^2	X^2	df	RC	RI	TO	TS	TV	TP	TK	TC	TT	TE	TG	CG	CT
02	17	1	0.99	46.71^b	12	1.00	0.26	-0.26	-0.55	-0.63	-0.33	-0.25	0.14	0.09	0.20	0.63	0.72	0.80
		2	0.74	12.04	10	0.04	0.74	-0.10	0.31	-0.35	0.10	0.02	0.21	-0.02	0.01	-0.40	-0.02	-0.02
03	26	1	0.88	38.32^b	12	1.00	-0.01	-0.09	-0.58	-0.19	-0.44	0.45	0.04	0.14	0.33	0.25	0.15	0.11
		2	0.63	17.84	10	-0.49	0.87	0.49	0.28	-0.44	-0.02	0.22	-0.57	-0.11	0.11	-0.05	-0.28	0.06
06	22	1	0.90	31.87^b	12	0.93	-0.12	-0.51	-0.60	-0.08	-0.57	-0.40	-0.70	-0.46	-0.08	0.77	0.70	0.86
		2	0.75	19.25^a	10	0.36	0.99	-0.26	-0.35	-0.74	-0.46	0.01	-0.47	0.03	-0.07	0.22	-0.08	0.23
07	16	1	0.93	20.75	12	0.33	1.00	-0.01	-0.03	0.29	0.29	-0.03	-0.05	-0.02	0.35	-0.11	-0.23	-0.12
		2	0.84	14.88	10	0.94	-0.03	-0.07	-0.15	-0.03	-0.10	0.33	0.23	0.22	0.18	-0.67	-0.65	-0.68
08	23	1	0.79	23.14^a	12	-0.06	0.99	-0.47	-0.53	0.01	0.18	-0.12	-0.40	0.25	0.08	0.38	0.32	0.43
		2	0.19	3.24	10	1.00	-0.12	0.55	0.10	0.08	0.52	0.49	-0.27	0.00	0.35	-0.06	-0.16	-0.12
11	32	1	0.59	21.26^a	12	0.35	0.99	0.38	0.24	0.31	0.19	0.16	0.22	0.11	-0.26	-0.29	-0.59	-0.83
		2	0.28	8.06	10	0.94	-0.14	-0.25	-0.34	-0.21	-0.19	0.09	-0.61	-0.64	0.10	0.45	0.15	0.03
12	24	1	0.80	25.91^a	12	-0.09	0.98	-0.17	-0.47	-0.55	-0.05	-0.24	-0.66	-0.40	0.12	0.05	0.31	0.28
		2	0.42	8.65	10	1.00	0.19	-0.22	0.09	0.17	0.09	-0.33	-0.01	0.59	-0.28	-0.19	-0.14	-0.13
14	21	1	0.88	27.64^a	12	1.00	-0.05	-0.87	-0.79	-0.03	-0.67	-0.59	-0.51	-0.42	-0.38	0.67	0.68	0.76
		2	0.48	8.60	10	0.00	1.00	0.26	0.06	0.28	-0.38	-0.04	0.13	-0.35	-0.43	-0.17	-0.18	-0.13
16	17	1	0.76	12.71	12	0.99	0.11	-0.32	-0.46	-0.21	-0.17	0.21	0.08	-0.53	0.69	-0.23	-0.12	-0.02
		2	0.34	3.77	10	-0.10	0.99	0.48	0.07	0.10	0.12	0.46	0.30	0.22	-0.06	-0.42	-0.30	-0.58
17	20	1	0.85	22.56^a	12	-0.33	0.96	0.22	-0.60	-0.71	-0.37	-0.50	-0.26	-0.25	0.05	0.73	0.63	0.84
		2	0.36	5.32	10	0.94	-0.29	0.45	0.10	0.35	-0.26	0.29	-0.22	0.01	0.48	-0.00	1.10	-0.04
18	19	1	0.84	19.91	12	0.93	-0.31	-0.18	9.70	0.46	0.54	0.09	-0.17	0.07	-0.28	-0.38	-0.50	-0.82
		2	0.54	8.45	10	0.37	0.95	0.53	-0.21	-0.14	-0.10	0.10	0.44	-0.27	0.36	-0.09	-0.29	-0.13
19	30	1	0.56	17.82	12	-0.41	0.84	0.16	-0.30	-0.56	-0.14	-0.31	0.09	-0.50	0.15	0.41	0.44	0.73
		2	0.30	7.93	10	0.91	0.55	0.39	-0.12	-0.21	-0.04	0.24	0.20	-0.39	0.27	0.01	-0.41	-0.34

TABLE V (Continued)

Class #	N	Root #	R_c^2	X^2	df	RC	RI	TO	TS	TV	TP	TK	TC	TT	TE	TG	CG	CT
20	19	1	0.81	18.12	12	0.64	0.82	-0.44	-0.58	-0.46	-0.52	-0.89	-0.41	0.03	0.10	0.40	0.42	0.65
		2	0.52	8.17	10	0.77	-0.57	0.37	0.27	-0.12	0.02	0.18	0.17	0.01	-0.12	-0.42	-0.22	-0.32

[a] $p < .05$.

[b] $p < .01$.

the thirteen largest classes.

From an inspection of Table V, it is apparent that the first null hypothesis can be rejected for the first root in eight of the thirteen largest classes. Thus, the first hypothesis seems to receive partial support from the data in the thirteen largest classes. However, as will be explained below, the practical significance of the relationship is questionable.

The second null hypothesis of the present study was that for all classes combined the canonical correlations between the set of predictor variables and the set of student ratings of instruction is not significantly greater than zero. Table VI presents the canonical roots, chi-square values, and the correlations of each variable with each root for all classes combined. The highly significant first root shown in Table VI indicates that the data support the second hypothesis of this study. Once again, however, it must be said that the practical significance of this relationship is questionable.

The questions as to the meaning and significance of the above correlations stems from the fact that a crucial limitation on the interpretation of these data was found to be compromised. As stipulated in the proposal, the suitability of the regressed difference score as an index of fulfillment

TABLE VI

CANONICAL ROOTS AND ROOT-VARIABLE CORRELATIONS FOR ALL CLASSES COMBINED USING REGRESSED DIFFERENCE SCORES

		Root I	Root II
R_c^2		0.45	0.04
X^2		203.53[b]	12.86
df		12.00	10.00
Root-Variable Correlations	RC	1.00	-0.08
	RI	0.26	0.97
	TO	-0.76	0.38
	TS	-0.79	-0.26
	TV	-0.25	-0.74
	TP	-0.66	-0.08
	TK	-0.52	-0.19
	TC	-0.68	0.10
	TT	-0.42	-0.05
	TE	-0.20	0.07
	TG	0.71	0.33
	CG	0.57	0.13
	CT	0.70	0.39

[b] $p < .01$.

of student expectations for "initiating structure" and "consideration" was dependent on the assumption that the greatest portion of the correlated variance in this difference score would be contributed by the SEQ scores and that only a minimal part of the variance would be contributed by the TBQ scores. The findings indicate, however, that this was not the case. From Table VII it is clear that the TBQ scores (OC and OI) contain a substantial amount of variance which is correlated with the student rating of instruction scores. Thus, a substantial portion of the variance in the regressed difference scores may be attributable to a type of halo effect which caused students to respond in a similar way to both the TBQ and to the student ratings of instruction, both of which were given on the same day. As a result of this evidence, it was felt that data supporting the original hypotheses would be of questionable significance without modifications of the statistical treatments of the data. The following supplemental procedures were used in an effort to provide more appropriate tests of the hypotheses.

Supplemental Results

In order to eliminate the variance contributed by the TBQ from the regressed difference socres, class means were

TABLE VII

INTERCORRELATION MATRIX OF ALL ORIGINAL VARIABLES FOR ALL CLASSES COMBINED

Vari-	Variables																
ables	EC	EI	OC	OI	TO	TS	TV	TP	TK	TC	TT	TE	TG	CG	CT	RC	RI
EC	1.00	0.27	0.16	0.13	-0.00	-0.01	-0.20	-0.06	-0.06	0.07	0.02	-0.00	0.02	0.10	0.14	-0.04	-0.01
EI		1.00	0.09	0.30	0.00	-0.03	-0.13	-0.05	-0.10	-0.05	0.00	-0.00	0.07	0.07	0.09	-0.01	-0.04
OC			1.00	0.25	-0.54	-0.65	-0.25	-0.52	-0.41	-0.40	-0.37	-0.19	0.65	0.68	0.71	0.60	0.13
OI				1.00	0.01	-0.16	-0.32	-0.21	-0.24	-0.14	-0.13	-0.03	0.28	0.29	0.40	0.12	0.20
TO					1.00	0.55	0.16	0.46	0.38	0.34	0.28	0.28	-0.46	-0.44	-0.45	-0.52	-0.06
TS						1.00	0.29	0.51	0.46	0.33	0.37	0.24	-0.62	-0.53	-0.64	-0.52	-0.19
TV							1.00	0.29	0.33	0.07	0.11	0.12	-0.40	-0.33	-0.54	-0.15	-0.18
TP								1.00	0.36	0.42	0.37	0.31	-0.46	-0.46	-0.53	-0.44	-0.13
TK									1.00	0.22	0.27	0.15	-0.51	-0.45	-0.53	-0.34	-0.13
TC										1.00	0.24	0.25	-0.32	-0.31	-0.32	-0.46	-0.10
TT											1.00	0.09	-0.40	-0.36	-0.35	-0.28	-0.08
TE												1.00	-0.25	-0.20	-0.18	-0.13	-0.02
TG													1.00	0.80	0.79	0.47	0.19
CG														1.00	0.76	0.38	0.13
CT															1.00	0.46	0.20
RC																1.00	0.18
RI																	1.00

computed for the TBQ variable in each of the twenty-one classes. The regressed difference score for each student was then recalculated using the appropriate class mean TBQ score in place of the individual student's TBQ score. Thus, a statistic which varies only as a function of the algebraic interaction between expectations and one non-varying measure of the instructor's mode of behavior was produced. The intercorrelations of these modified regressed difference scores (MRC and MRI) and the student ratings of instruction are presented in Table VIII.

The modified difference scores were used in a re-analysis of the data. As indicated in Table IX, however, the modified difference scores were somewhat ineffective in providing support for the hypotheses. Clearly, the null hypotheses cannot be rejected in the thirteen largest classes. In only one case does the first root have a significance beyond the .05 level, and in interpreting this instance one must take into account the probability of finding a root of such magnitude among the substantial number of correlations produced.

Table X presents the canonical analysis of all classes taken together using the modified difference scores. This analysis provides some limited support for the hypotheses. Two roots which are significant beyond the .01 level were

TABLE VIII

INTERCORRELATIONS OF THE MODIFIED REGRESSED DIFFERENCE SCORES

	MRC	MRI
MRC	1.00	-0.02
MRI	-0.02	1.00
TO	-0.33	0.00
TS	-0.31	0.10
TU	-0.00	0.18
TP	-0.22	0.03
TK	-0.28	0.08
TC	-0.21	-0.12
TT	-0.27	0.15
TE	-0.06	-0.14
TG	0.32	-0.05
CG	0.32	0.04
CT	0.29	-0.13

TABLE IX

CANONICAL ROOTS AND ROOT-VARIABLE CORRELATIONS FOR THE THIRTEEN LARGEST CLASSES USING MODIFIED REGRESSED DIFFERENCE SCORES

Class #	N	Root #	R_c^2	X^2	df	MRC	MRI	TO	TS	TV	TP	TK	TC	TT	TE	TG	CG	CT
02	17	1	0.90	20.84	12	0.96	-0.13	0.24	0.05	0.46	0.27	0.23	-0.08	-0.37	0.53	-0.23	-0.04	-0.20
		2	0.60	8.23	10	-0.28	0.99	-0.08	0.07	0.23	-0.11	-0.20	0.19	-0.50	-0.33	-0.13	-0.37	-0.23
03	26	1	0.52	13.28	12	-0.45	0.89	0.09	0.13	0.07	0.07	0.50	0.37	-0.37	-0.01	-0.27	-0.21	-0.14
		2	0.20	4.11	10	0.76	0.66	0.03	0.54	0.33	0.57	0.30	0.36	0.37	0.57	0.03	-0.13	-0.27
06	22	1	0.55	11.20	12	0.95	-0.27	-0.33	0.10	0.28	-0.00	0.12	0.06	0.28	0.26	-0.17	0.21	0.12
		2	0.34	5.85	10	-0.30	0.96	-0.32	-0.18	-0.50	-0.48	-0.46	-0.00	-0.57	-0.51	0.33	0.20	0.42
07	16	1	0.85	15.11	12	-0.20	0.98	0.37	0.44	-0.19	-0.25	-0.41	0.35	-0.16	-0.05	0.57	0.24	0.07
		2	0.71	9.81	10	0.98	0.20	-0.00	-0.13	-0.24	-0.27	0.05	0.40	0.43	-0.42	-0.05	-0.21	0.16
08	23	1	0.70	18.11	12	-0.23	0.10	0.15	0.50	0.30	0.09	0.35	0.30	-0.14	0.00	-0.02	-0.09	-0.27
		2	0.42	8.04	10	0.97	0.01	0.14	0.02	-0.47	-0.24	-0.03	0.60	0.06	0.00	0.34	0.07	0.37
11	32	1	0.54	18.83	12	-0.39	0.92	0.18	-0.28	-0.24	0.05	0.22	0.12	0.00	0.03	0.55	0.19	-0.01
		2	0.28	7.91	10	0.92	0.39	0.04	-0.04	0.12	-0.13	0.09	0.39	0.49	0.47	0.02	0.42	0.37
12	24	1	0.68	18.16	12	0.75	0.87	0.15	-0.36	-0.26	0.30	-0.22	0.07	0.05	0.28	0.59	0.34	0.17
		2	0.41	8.48	10	0.67	-0.50	-0.46	0.04	0.24	-0.20	-0.59	-0.24	-0.28	-0.42	0.37	0.41	0.25
14	21	1	0.76	18.60	12	0.95	0.13	-0.13	-0.05	0.68	-0.20	-0.20	0.30	0.23	-0.18	0.18	0.00	-0.11
		2	0.46	7.99	10	0.31	0.99	0.01	-0.18	0.11	-0.47	0.02	-0.42	-0.48	-0.36	0.07	0.31	-0.07

TABLE IX (Continued)

Class #	N	Root #	R_c^2	x^2	df	MRC	MRI	TO	TS	TV	TP	TK	TC	TT	TE	TG	CG	CT
16	17	1	0.95	27.21[b]	12	0.94	-0.73	-0.42	-0.41	-0.74	-0.24	-0.08	0.48	-0.41	0.07	0.41	0.72	0.50
		2	0.77	13.16	10	0.32	0.69	0.16	0.06	0.41	0.50	0.17	0.13	0.10	0.64	-0.42	-0.15	-0.24
17	20	1	0.74	16.08	12	0.10	-0.41	-0.11	0.26	-0.37	-0.35	-0.43	-0.07	0.34	-0.17	0.26	0.41	0.54
		2	0.64	12.09	10	-0.04	0.92	-0.37	-0.04	0.06	-0.35	-0.22	-0.40	0.21	-0.35	0.32	0.20	-0.02
18	19	1	0.73	14.21	12	-0.35	0.88	-0.31	-0.06	-0.03	-0.15	-0.47	-0.61	0.35	-0.47	0.43	0.64	0.24
		2	0.58	9.66	10	0.94	0.47	0.49	-0.21	0.12	-0.59	-0.40	0.10	0.06	0.46	0.11	-0.07	0.22
19	30	1	0.41	11.78	12	-0.36	0.99	-0.05	0.23	-0.17	0.36	0.41	-0.05	0.21	-0.43	0.17	-0.45	-0.30
		2	0.16	3.82	10	0.93	0.14	-0.21	0.02	0.23	-0.37	0.06	-0.23	0.01	0.22	-0.00	-0.22	0.21
20	19	1	0.83	19.43	12	0.86	-0.68	0.16	0.58	0.37	0.62	0.42	0.43	0.46	0.06	-0.53	-0.19	-0.51
		2	0.46	6.73	10	0.52	0.73	-0.54	-0.09	-0.39	-0.26	-0.47	-0.44	-0.25	-0.62	0.31	0.67	0.34

[b] $p < .01$.

TABLE X

CANONICAL ROOTS AND ROOT-VARIABLE CORRELATIONS FOR ALL CLASSES COMBINED USING MODIFIED REGRESSED DIFFERENCE SCORES

	Root I	Root II
R_c^2	0.20	0.14
X^2	76.98^b	50.00^b
df	12.00	10.00
RC	1.00	0.08
RI	-0.10	0.99
TO	-0.73	-0.08
TS	-0.71	0.19
TU	-0.04	0.48
TP	-0.50	0.01
TK	-0.64	0.15
TC	-0.43	-0.39
TT	-0.61	0.32
TE	-0.11	-0.38
TG	0.71	-0.05
CG	0.71	0.19
CT	0.66	-0.28

$^b p < .01$.

extracted but their usefulness must be questioned because of their small size. The first root of the predictor set can account for only 20 per cent of the variance in the first root of the student rating set while the second root can account for only 13 per cent of the variance in its second-set counterpart.

A statistic developed by Stewart and Love (Cooley and Lohnes, 1971) called redundancy provides a more accurate perspective of the meaning and usefullness of these two roots. The redundancy is a measure of the proportion of the variance in one set of variables which is redundant to the variance known from another set of variables (Cooley and Lohnes, 1971). In the case of the present study, it is the amount of variance in the student ratings of instruction redundant to the variance in the set of fulfillment of expectation scores which is of concern. Given the two significant canonical roots found in the analysis of the combined classes, it can be said that the redundancy of the student ratings of instruction was on the order of .08 or 8 per cent. In other words, approximately 8 per cent of the information in the student ratings of instruction was accounted for in terms of the fulfillment of expectation variables that were used in this investigation.

Before the discussion of the results, it should be noted that the means and standard deviations of each variable as stratified into various traditionally used categories were inspected in order to estimate the homogeneity of the many subgroups. These statistics are presented in Appendix J. No differences which would affect the substantive findings of this study were found.

Discussion and Conclusions

In general, the data provided only weak support for the hypotheses. The chi-square values of the original hypotheses presented in Table V indicate that in only eight of the thirteen largest classes were the first roots (the roots corresponding primarily to fulfillment of expectations for "consideration") significant at the .05 level. Table V further indicates that the second roots (the roots corresponding primarily to "initiating structure") were significant (at the .05 level) in only one case. And, as has been previously mentioned, this one case must be interpreted cautiously. In Table VI the significant first root (the one corresponding to fulfillment of expectations for "consideration") indicates that there was a substantial portion of shared variance (45 per cent) between the first principal components of each set. Taken together, the data from Tables V and VI seem to provide some support for the hypothesis that there was a relationship between the degree to which students' expectations for the instructor's "consideration" behavior were fulfilled and the favorableness of the ratings which they give their instructor.

The chi-square values presented in Table IX indicate that there was no relationship between the set of modified regressed difference scores and the student ratings of instruction. This result suggests that the variance in the difference scores which can be known from the student expectations scores alone is not sufficiently large to be of any use in the practical matter of predicting student ratings of instruction within individual classes. In other words, the data indicate that the expectational differences among students as seen within classes cannot be said to account for any significant portion of the variance in the ratings given a particular instructor in a particular class.

As indicated in Table X, both the first and second roots extracted from the group of all classes combined were significant at the .01 level. These results seem to indicate that a significant portion of the variance in the student ratings of instruction can be known from the variance in student expectation scores when a sufficiently large group of students is being observed. The practical value of this relationship is in its possible application to the problem of assignment of students to instructors. If the predictive relationship found in these data holds for other student populations, it could be used as a basis for matching students and instructors in such a way that student satisfaction with instruction would be increased.

The data of this study are relevant to the interpretation of student ratings of instruction in one other way. If it is true that, as the present findings indicate, a small portion of the variance in student ratings of instruction can be known from the distribution of student expectational characteristics, it can be said that an instructor's ratings are affected at least in small part by the fortune or misfortune he has in enrolling students whose expectational characteristics match his typical mode of teaching behavior. The implication of this finding is that, even with very reliable student ratings, small differences between instructor ratings from classes with students of unknown characteristics are practically uninterpretable.

In summary, this study attempted to rectify a presumed weakness in the research literature dealing with student ratings of instruction. Specifically, it was determined that previous studies had not answered the question of how the interaction of student characteristics and various modes of teacher behavior are related to student ratings of instruction. Stogdill's small group theory was used as a basis for delineating the course of this interaction, and modifications of the Leader Behavior Description Questionnaire were used to measure both student characteristics and teacher behaviors. The general hypothesis that discrepancies between student expectations and observed teacher behavior are predictively related to student ratings of instruction was tested in a sample of graduate and undergraduate students at the University of Florida. The results indicate that there was some relationship, particularly between fulfillment of expectations for "consideration" and student ratings of instruction. However, the relationship was found to be so small that it became statistically significant only in sizeable groups. It is suggested that this relationship has some practical implications in the area of assignment of students to instructors and in the area of interpretation of student ratings of instruction.

Suggestions for Future Research

A portion of the variance in student ratings of instruction which is theoretically significant but apparently of limited practical importance was found to be related to student expectational characteristics. There were, however, several reasons why the observed relationships can be considered a conservative indication of the true relationships between fulfillment of expectations and student ratings of instruction. The following limitations are all ones which would have served to reduce the magnitude of the present correlations and they should be given consideration by both consumers of the present findings and future investigators in this area of research.

The first of these limitations is in the area of design. The sample used in this study was composed of classes whose instructors were willing to participate in the study. Although there was no obvious bias in the selection of classes for the study or in the mortality of classes from the study, an inspection of the TBQ means indicates that the participating instructors were generally well up into the high end of the score range of the instrument on both factors. Unquestionably, this observation is not firm evidence that the sample was biased in that there are no norms available to which the present scores can be compared. In fact, this problem could be alternatively viewed as a weakness of the TBQ instrument which may not have been able to adequately discriminate within the observed sample. Whichever is the case, it is suggested that the magnitude of the hypothesized relationships may not have been accurately reflected in the present findings. In other words, there is the possibility that either the nature of the sample or the sensitivity of the instrument might have effected a shortened range of responses and that this impediment reduced the magnitude of the observed correlations.

It should be added that this type of limitation was also operating in the student sample. Numerous students who filled out the SEQ on the first day of class were not in attendance on the day when the TBQ and student ratings of instruction were collected. Thus, the students who were so excluded from the sample were likely to include a selectively high proportion of students who did not like the course and who, in many cases, had dropped the course.

Another problem which was likely to have contributed to the small correlations observed in this study was the association which students were able to make between the student ratings of instruction and the TBQ instrument. Even though students were not given the written instructions about the TBI and CEI until after they had completed the TBQ, students in several classes made verbal comments indicating that they considered the TBQ to be another student evaluation of instruction form. Thus, it is quite possible that the substantial correlation between the TBI and the student ratings of instruction was attributable to a general evaluation halo which influenced all three instruments. Such an association on the part of the student would be particularly understandable when it is realized that, in most classes, students were told by the instructor that the class period (second day of data collection) would be devoted to student ratings of instruction and, furthermore, that the same proctor handed out both the TBQ and the student ratings of instruction.

Some of the most serious limitations of the present study were presented by the variance-reducing effects of the statistical analyses. The transformation of the raw difference scores into regressed difference scores and into the modified regressed difference scores substantially reduced the variances of each distribution. Then the remaining variance was effectively halved by taking the absolute value of the regressed difference scores. Such drastic reductions in variance could only have had the effect of greatly diminishing the magnitude of any correlational relationship between the predictor and student rating variables.

However, all of these procedures were necessary. Without the use of the regressed difference scores there would have been a marked regression artifact interfering with the magnitude and distribution of each set of difference scores. Without the use of the modified difference scores (which held the variability of the TBQ scores to zero) any support for the hypotheses would have been open to the question whether the correlations were of any value. Without the use of the absolute values of the difference scores the hypotheses of the study could not have been tested (Stogdill's theory holds that the absolute size of the discrepancy between expectations and observed behavior predicts satisfaction).

Another area of difficulty was presented by the skewed distributions of all of the predictor scores and most of the criterion scores. Both sets of regressed difference scores (the RC, RI, and MRC, MRI) were skewed as a result of having been modified by the absolute value function. Their appearance resembled that of a normal distribution which had been folded at the mean with the negative scores overlapped onto the positive half of the scale. This type of distribution is exactly what would be expected from the procedures used. The distributions of the eight TBI factors were also skewed but not because of any statistical manipulations performed by the investigator. Apparently these skewed distributions ordinarily result from the TBI as a product of its recommended scoring procedure.*

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*C. Bridges, personal communication.

One way in which the effects of these skewed distributions could have been reduced would have been through the use of some type of score transformation for each variable. However, this possibility was explored and found not to be feasible. According to Kirk (1968), appropriate transformations can be found only for those sets of scores in which the means and variances are proportional. However, such was not the case with the difference scores used in the present study. Thus, the observed correlations were diminished by the skewness of both the predictor scores and the student rating of instruction scores.

One last statistical problem which should be mentioned deals with the reliability of the predictor and criterion scores. The SEQ and the TBQ were found to have remarkably reliable factor scores given that each factor contained only fifteen items. This reliability is somewhat misleading, however, in that the reliability of a difference score is considerably less than the reliability of either of its component scores (Thorndike and Hagen, 1961). This problem exists because a difference score contains the total error variance of its component scores but does not contain the true variances which they have in common. Thus, difference scores contain a much greater ratio of error variance to true variance than do either of their component scores.

This reduced reliability is yet another factor which was likely to have diminished correlations in the present study.

In summary, there were two outstanding problems encountered by the present study with which future investigators must contend. First was the lack of experimental control over both instructors and students. College professors are commonly known to be jealous of their prerogatives as to what goes on in their classrooms. Yet if a study such as the present one is to succeed, it will have to gain either better instructor cooperation or greater administrative control so that the times and conditions under which the data are collected can be made more uniform and generally suited to the needs of the study. This is not to imply that the instructors who participated in the present study were uncooperative. In fact, the contrary is true. In most cases they were quite cooperative and in some cases even solicitous. The point being made is that this type of study requires a substantial amount of classroom time for data collection (sixty-five minutes in three separate class periods) and this much of a disturbance is more than most instructors are voluntarily willing to tolerate. Also, the investigator needs to be in better control of the announcements and instructions given the students regarding the times and purposes for which the data is being collected. Such control is difficult to maintain even if the investigator personally makes all of the announcements directly to the students much less if he, as in the present study, gives them to the instructor to pass on to the students. One other benefit of better expeimental control would be that the investigator would be able to use a legitimate random process in the selection of classes and thereby have some assurance as to the representativeness of his sample.

The second outstanding area of problems with which future investigators must contend is the statistical treatment of the data. The basic problem lies in taking the absolute value of difference scores when the variance of the difference scores have already been substantially reduced by the use of other procedures. This difficulty could be avoided if the investigator were able to use a theoretical orientation which did not state the interaction between student characteristics and teacher behavior in terms of an absolute value function.

APPENDICES

APPENDIX A

LEADER BEHAVIOR DESCRIPTION QUESTIONNAIRE: CONSIDERATION AND INITIATING STRUCTURE KEYS

CONSIDERATION KEY*

Item	Factor loading
He does personal favors for crew members	.68
He does little things to make it pleasant to be a member of the crew	.74
He is easy to understand	.69
He finds time to listen to crew members	.81
He keeps to himself	-.52
He looks out for the welfare of individual crew members	.70
He refuses to explain his actions	-.77
He acts without consulting the crew	-.62
He is slow to accept new ideas	-.67
He treats all crew members as his equals	.81
He is willing to make changes	.74
He is friendly and approachable	.81
He makes crew members feel at ease when talking with him	.74
He puts suggestions by the crew into operation	.67
He gets crew approval on important matters before going ahead	.63

*A. Halpin and B. Winer, "A factorial study of the leader behavior descriptions," in Leader behavior: Its description and measurement, ed. by R. Stogdill and A. Coons (Columbus, Ohio: Ohio State University, Bureau of Business Research, 1957), p. 47.

INITIATING STRUCTURE KEY*

Item	Factor loading
He makes his attitude clear to the crew	.63
He tries out his new ideas in the crew	.62
He rules with an iron hand	.61
He criticizes poor work	.55
He speaks in a manner not to be questioned	.47
He assigns crew members to particular tasks	.57
He works without a plan	-.58
He maintains definite standards of performance	.75
He emphasizes meeting deadlines	.48
He encourages the use of uniform procedures	.66
He makes sure his part in the crew is understood by members	.72
He asks that crew members follow standard operating procedures	.60
He lets crew members know what is expected of them	.58
He sees to it that crew members are working up to capacity	.71
He sees to it that the work of crew members is coordinated	.60

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*A Halpin and B. Winer, "A factorial study of the leader behavior descriptions," in Leader behavior: Its description and measurement, ed. by R. Stogdill and A. Coons (Columbus, Ohio: Ohio State University, Bureau of Business Research, 1957), p. 48.

APPENDIX B

STUDENT EXPECTATIONS QUESTIONNAIRE AND TEACHER BEHAVIOR QUESTIONNAIRE

Your Identification Mark____________

Your Instructor's Name____________

STUDENT EXPECTATIONS QUESTIONNAIRE

By responding to the following items, describe the way in which you expect the instructor of this class to behave during the coming quarter. Try to indicate the level of behavior which you feel can reasonably be expected as opposed to that which you might ideally expect.

Indicate the frequency with which you expect the instructor to do each of the things listed below by circling the appropriate letter.

A. Always
B. Almost always
C. Usually
D. Occasionally
E. Once in awhile
F. Rarely
G. Never.

Example:

[✓ A] B C D E F G He will grade assignments fairly.

A B C D E F G 1. He will do personal favors for class members who have problems.
A B C D E F G 2. He will make his personal viewpoint clear to the class.
A B C D E F G 3. He will try to make the class a pleasant experience for the students.
A B C D E F G 4. He will try out his new ideas in the class.
A B C D E F G 5. He will be easy to understand.
A B C D E F G 6. He will rule with an iron hand.
A B C D E F G 7. He will find time to listen to class members' problems.
A B C D E F G 8. He will make constructive criticisms of poor work.
A B C D E F G 9. He will be distant and impersonal in his dealings with students.
A B C D E F G 10. He will speak in a manner not to be questioned.
A B C D E F G 11. He will show interest in the welfare of individual class members.
A B C D E F G 12. He will give class members specific work assignments.
A B C D E F G 13. He will refuse to explain his actions to class members.
A B C D E F G 14. He will work without a plan.
A B C D E F G 15. He will make changes in class routines without consulting the class.
A B C D E F G 16. He will maintain definite standards of academic performance.
A B C D E F G 17. He will be slow to accept new ideas from the class.
A B C D E F G 18. He will emphasize meeting deadlines.
A B C D E F G 19. He will treat class members as his equals.
A B C D E F G 20. He will require the use of a standard style in written assignments.
A B C D E F G 21. He will be willing to make changes.
A B C D E F G 22. He will make sure that his role in class activities is understood.
A B C D E F G 23. He will be friendly and approachable.
A B C D E F G 24. He will ask that class members conform to applicable university regulations.
A B C D E F G 25. He will make class members feel at ease when talking with him.
A B C D E F G 26. He will let class members know what is expected of them.
A B C D E F G 27. He will make use of suggestions made by class members.
A B C D E F G 28. He will require class members to make their best effort on assignments.
A B C D E F G 29. He will seek class approval on important matters before going ahead.
A B C D E F G 30. He will require the work of class members to be on schedule.

Answer the following two questions by circling YES or NO.

YES NO Are you aware of having taken any previous courses under this instructor?
YES NO Do you have any knowledge of how this instructor conducts his classes?

Your Identification Mark_______________

Your Instructor's Name_________________

TEACHER BEHAVIOR QUESTIONNAIRE

By responding to the following items, describe the behavior of your instructor. Try to be as objective as possible.

Indicate the frequency with which your instructor does each of the things listed below by circling the appropriate letter.

A. Always
B. Almost always
C. Usually
D. Occasionally
E. Once in awhile
F. Rarely
G. Never

Example:

[✓ A] B C D E F G He attends class meetings.

A B C D E F G 1. He does personal favors for class members who have problems.
A B C D E F G 2. He makes his personal viewpoint clear to the class.
A B C D E F G 3. He tries to make the class a pleasant experience for the students.
A B C D E F G 4. He tries out his new ideas in the class.
A B C D E F G 5. He is easy to understand.
A B C D E F G 6. He rules with an iron hand.
A B C D E F G 7. He finds time to listen to class members' problems.
A B C D E F G 8. He makes constructive criticisms of poor work.
A B C D E F G 9. He is distant and impersonal in his dealings with students.
A B C D E F G 10. He speaks in a manner not to be questioned.
A B C D E F G 11. He shows interest in the welfare of individual class members.
A B C D E F G 12. He gives class members specific work assignments.
A B C D E F G 13. He refuses to explain his actions to class members.
A B C D E F G 14. He works without a plan.
A B C D E F G 15. He makes changes in class routines without consulting the class.
A B C D E F G 16. He maintains definite standards of academic performance.
A B C D E F G 17. He is slow to accept new ideas from the class.
A B C D E F G 18. He emphasizes meeting deadlines.
A B C D E F G 19. He treats class members as his equals.
A B C D E F G 20. He requires the use of a standard style in written assignments.
A B C D E F G 21. He is willing to make changes.
A B C D E F G 22. He makes sure that his role in class activities is understood.
A B C D E F G 23. He is friendly and approachable.
A B C D E F G 24. He asks that class members conform to applicable university regulations.
A B C D E F G 25. He makes class members feel at ease when talking with him.
A B C D E F G 26. He lets class members know what is expected of them.
A B C D E F G 27. He makes use of suggestions made by class members.
A B C D E F G 28. He requires class members to make their best effort on assignments.
A B C D E F G 29. He seeks class approval on important matters before going ahead.
A B C D E F G 30. He requires the work of class members to be on schedule.

APPENDIX C

STUDENT EVALUATION OF TEACHING BEHAVIORS INSTRUMENT INCLUDING ITEM WEIGHTS USED FOR SCORING

STUDENT EVALUATION OF COLLEGE TEACHING BEHAVIORS

Introduction

Faculty and Students are giving increasing attention to the improvement of instruction. This instrument has been designed to describe teaching behavior in which your instructor has engaged in this course.

You are asked to give honest answers to the questions appearing on the attached pages. Please do not write on this form. An answer sheet has been provided. The answer sheets are not to be signed. The results will be tabulated by graduate assistants in the Research Center of the College of Education. Summaries of the results will be furnished to the instructor only after final grades have been turned in.

Directions

Listed below are statements describing teaching behaviors that the instructor in this course may or may not have displayed. Some of the teaching behaviors described are related to "good" college teaching, and some are related to "bad" college teaching. All items are not necessarily appropriate to all courses and/or all instructors.

As you examine each item, you must decide whether the behavior described is relevant to your learning in this particular classroom. Mark the item as follows:

a. If the item is not relevant (does not apply) to this course, leave the item blank.

b. Circle 1 if you consider the item to be relevant and it describes the behavior of the instructor in this class.

c. Circle 2 if you consider the item to be relevant and it does not describe the behavior of the instructor in this class.

1. Admitted lack of knowledge.

2. Told students what he expected of them.

3. Gave organized answers to complicated questions in class.

4. Changed pitch, volume or quality of speech.
5. Would not deal with questions covering material beyond text.
6. Called often upon relevant personal experiences in teaching subject.
7. Missed class often due to non-teaching responsibilities.
8. Permitted students to disrupt classroom activities.
9. Permitted students to express opinions which differed from his own.
10. Tested primarily for isolated and/or obscure details.
11. Dealt with questions covering material beyond text.
12. Encouraged students to ask questions.
13. Introduced new ideas and/or research findings in class.
14. Gave references to current publications.
15. Explained how grading was done.
16. Provided feedback on student work promptly.
17. Ridiculed students in front of class.
18. Could be heard in all parts of classroom.
19. Presented material as an extension of the text.
20. Students could understand professor's vocabulary.
21. Spoke with poise.
22. Students could understand class presentation.
23. Penalized students for disagreeing with teacher.
24. Listened to students' problems.
25. Presented obsolete material.

26. Ignored student questions.

27. Dealt with student difficulties before they arose.

28. Showed boredom for teaching this class.

29. Admitted being wrong when shown he was in error.

30. Talked with students outside of class.

31. Laughed at his own mistakes.

32. Frequently read aloud from the textbook.

33. Established and kept office hours for individual conferences.

34. Gave tests which could be completed within the allotted time.

35. Accepted and/or used inaccurate information.

36. Presented facts without relating them to one another.

37. Gave clear, reasonable assignments.

38. Utilized background of students to aid in class activities.

39. Informed students of reports and term papers at the beginning of the course.

40. Class presentations were primarily reiterates of textbook.

41. Asked challenging and/or probing questions.

42. Remained unruffled by student's questions.

43. Stated course objectives.

44. Complained about his teaching assignments.

45. Was late to class.

46. Lead students to answer own questions.

47. Insisted that his opinions were the only correct ones.

48. Read extensively from his lecture notes.

49. Permitted students to complete thought processes.

50. Spoke distinctly.

51. Encouraged class discussion.

52. Lacked knowledge of subject being presented.

53. Stated basis by which grades were determined.

54. Explained the reasons for his criticisms.

55. Announced exams in advance.

56. Delivered orderly, logical presentations of the material.

57. Came to class and appointments on time.

58. Made no comment (oral or written) on returned papers.

59. Presented irrelevant material during lectures.

60. Evaluated each student as an individual.

Instructor's Name________________ Course Number__________

Answer Sheet

STUDENT EVALUATION OF COLLEGE TEACHING BEHAVIORS

DIRECTIONS: Before beginning, please fill in the following information. Use the number which corresponds to your answer.

Your present college standing: __________

(1)	Freshman	(4)	Senior
(2)	Sophomore	(5)	Graduate
(3)	Junior	(6)	Other

Sex:

(1) Male (2) Female __________

College in which you are currently enrolled: __________

(01)	Agriculture	(10)	Law
(02)	Architecture & Fine Arts	(11)	Medicine
(03)	Arts & Sciences	(12)	Military Science
(04)	Business Administration	(13)	Nursing
(05)	Dentistry	(14)	Pharmacy
(06)	Education	(15)	Physical Education, Health & Athletics
(07)	Engineering		
(08)	Health & Related Professions	(16)	University College
(09)	Journalism & Communications	(17)	Unknown

Your over-all grade average: __________

(1)	A	(4)	B	(7)	C
(2)	A-	(5)	B-	(8)	C-
(3)	B+	(6)	C+	(9)	D+
				(10)	D or below

Reason for taking this course: __________

(1) Required (2) Elective (3) Other

1. 1 2
2. 1 2
3. 1 2
4. 1 2
5. 1 2
6. 1 2
7. 1 2
8. 1 2
9. 1 2
10. 1 2
11. 1 2
12. 1 2
13. 1 2
14. 1 2
15. 1 2
16. 1 2
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34. 1 2
35. 1 2
36. 1 2
37. 1 2
38. 1 2
39. 1 2
40. 1 2
41. 1 2
42. 1 2
43. 1 2
44. 1 2
45. 1 2
46. 1 2
47. 1 2
48. 1 2
49. 1 2
50. 1 2
51. 1 2
52. 1 2
53. 1 2
54. 1 2
55. 1 2
56. 1 2
57. 1 2
58. 1 2
59. 1 2
60. 1 2

If you had to assign the instructor of this course a letter grade for his teaching, how would you grade him (her)? Please circle the grade of your choice.

(1) A (4) B (7) C (10) D or below
(2) A- (5) B- (8) C-
(3) B+ (6) C+ (9) D+

ITEM WEIGHTS FOR TBI

1.	0.0124
2.	0.8938
3.	0.7548
4.	0.3747
5.	-0.1363
6.	0.7563
7.	-0.5267
8.	-0.0641
9.	0.3694
10.	-1.2336
11.	0.3245
12.	1.6044
13.	2.3467
14.	0.7640
15.	0.4035
16.	0.4503
17.	-0.5683
18.	0.5761
19.	0.2639
20.	0.7152
21.	0.2589
22.	2.6009
23.	-2.9067
24.	1.0184
25.	-0.2425
26.	-0.6040
27.	0.1793
28.	-0.1954
29.	0.0610
30.	0.6136
31.	0.3032
32.	-0.7574
33.	1.1104
34.	1.3152
35.	-0.2761
36.	-0.1087
37.	1.0842
38.	0.2705
39.	0.1439
40.	-0.6348
41.	0.3894
42.	0.1657
43.	0.7053
44.	-0.1032
45.	-0.5996
46.	0.3338
47.	-1.5217
48.	-1.3356
49.	0.2922
50.	0.9459
51.	2.1531
52.	-1.7066
53.	0.0171
54.	0.6906
55.	2.2290
56.	0.1944
57.	0.8536
58.	-0.6791
59.	-0.8163
60.	0.8074

APPENDIX D

STUDENT REPORT ON CLASSROOM TEACHING INSTRUMENT

STUDENT REPORT ON CLASSROOM TEACHING

Form A

The faculty of the College of Education is seeking constantly to improve the quality of its instructional program. You as a student can assist by giving your reaction to the type of instruction which you have experienced in this class. Individual faculty members for years have been seeking students' evaluations of their teaching procedures. In 1961-1962 the faculty selected a uniform blank which was tried out in many classes. This is a revision of that form.

You are asked to give honest and sincere answers to the questions on the attached blanks. The blanks are not to be signed. Answers will be tabulated by computer through the research center of the College of Education and the summaries of the replies will be furnished the instructor. Instructors will not see the results until grades are turned in.

Your reactions and suggestions about the work of this class will be appreciated and will serve as one basis for future planning.

Please do not write on this form. An answer sheet will provided.

- -

DIRECTIONS

Select the one descriptive phrase under each item which best describes your instructor or his teaching and circle the corresponding number on the answer sheet. Do not consult with classmates; make your own ratings. Do not sign your name.

Questions

1. How would you rate your instructor in general (all-around) teaching ability?

    1. An outstanding and stimulating instructor
    2. A very good instructor
    3. A good instructor
    4. An adequate, but not stimulating instructor
    5. A poor and inadequate instructor

2. How well does the instructor adapt the course to your level of comprehension?

    1. Nearly always adjusts to my level
    2. Usually adjusts to my level
    3. Adjusts to my level more often than not
    4. Adjusts to my level about half of the time
    5. Seldom adjusts to my level
    6. Is lower than my level
    7. Does not apply to this course

3. How interesting (or stimulating) does he make the material?

    1. One of the most interesting teachers I have had
    2. Above average in creating interest
    3. Just about average
    4. Less interesting than most teachers
    5. Material is dull, one of the most boring experiences I have had
    6. Does not apply to this course

4. How well does he seem to know the subject?

    1. Thorough and profound scholarship
    2. Knowledge broad and accurate
    3. Well-rounded knowledge of the subject
    4. Adequate knowledge
    5. Inadequate knowledge
    6. Does not apply to this course

5. What kind of interest does he show in students and student problems?

    1. Actively seeks student opinions, respects confidences, and helps students arrive at satisfying solutions.
    2. Permits students to express opinions and raise problems which are of concern to them.
    3. Tolerates student opinions but has an attitude which discourages frankness and openness from students.
    4. Displays little interest in student problems or opinions; hard to talk with
    5. Appears to be antagonistic to students and student problems
    6. Does not apply to this course

6. How efficient is he in the use of time?

   1. Classes show evidence of careful planning and very efficient use of time
   2. He is above average in efficient use of class time
   3. This is about an average class in efficient use of time
   4. I have a feeling that we are often wasting time
   5. The teacher wastes much time and makes poor use of the rest
   6. Does not apply to this course

7. How clear are the goals in this class?

   1. I have known from the beginning what we were expected to get from the course and I can see the relation of what we are doing to these goals
   2. The goals are clear but sometimes it is hard to see how what we are doing contributes toward these goals
   3. The goals of the course are about as clear as in the average course
   4. I am beginning to see what our goals are but I was confused for a long time
   5. I don't know what we are supposed to achieve in this class
   6. Does not apply to this course

8. How clearly are responsibilities in this course defined?

   1. I always know what is expected of me
   2. I usually know what is expected of me
   3. I usually have a general idea of what is expected of me
   4. I often am in doubt about what is expected of me
   5. I seldom know what is expected of me
   6. Does not apply to this course

9. Do you feel that you are able to get personal help in this course if you need it?

   1. Can get a great deal of personal help from the instructor or assistants
   2. Can get quite a bit of personal help
   3. Can get a moderate amount of help
   4. Can get a small amount of help

5. Can get no personal help from the instructor or assistants
6. Does not apply to this course

10. Are the grading policies fair?

    1. Unusually or exceptionally fair
    2. Fairer than most
    3. As fair as the average instructor's policies
    4. Unfair to some
    5. Unfair to many
    6. Doesn't know what they are
    7. Does not apply to this course

11. How helpful are the evaluation procedures used?

    1. Very helpful in assessing progress toward our goals
    2. Of more than average help in assessing progress
    3. About average
    4. Of little help
    5. Of no help
    6. We do not use any, as far as I can tell
    7. Does not apply to this course

12. How much does he encourage original and creative thought by students?

    1. Strongly encourages students' attempts to be original
    2. Mildly encourages students' attempts to be original
    3. Permits students to differ with text and instructor
    4. Has a condescending attitude toward what students may consider original but which has been discovered by others
    5. Humiliates students for immaturity of ideas and lack of knowledge of the field
    6. Does not apply to this course

INSTRUCTOR'S NAME______________ COURSE NUMBER__________

ANSWER SHEET

STUDENT REPORT ON CLASSROOM TEACHING

Form A

Date______________________

DIRECTIONS: IN THE BLANK TO THE RIGHT OF EACH CATEGORY, PLACE THE NUMBER FOR YOUR CHOICE

Your present college standing: ______
1. Freshman
2. Sophomore
3. Junior
4. Senior
5. Graduate
6. Other

Your over-all undergraduate grade average: ______
01. A
02. A-
03. B+
04. B
05. B-
06. C+
07. C
08. C-
09. D+
10. D or below

An estimate of your current grade in this course: ______
1. A
2. B
3. C
4. D
5. F
6. Unknown

College of the University in which you are registered: ______
1. Education
2. Arts and Sciences
3. Health and Related Services
4. Physical Education
5. Other

Sex: 1. Male 2. Female ______

Why did you take this course:
1. Required 2. Elected 3. Other ______

. . . .

DIRECTIONS: 1. CIRCLE THE NUMBER FOR YOUR CHOICE ON EACH OF THE RATING ITEMS, AND
2. ENTER THIS NUMBER IN THE ANSWER BLANK TO THE RIGHT OF THE ITEM.

Item No.	Choices							Answer
1.	1	2	3	4	5			________
2.	1	2	3	4	5	6	7	________
3.	1	2	3	4	5	6		________
4.	1	2	3	4	5	6		________
5.	1	2	3	4	5	6		________
6.	1	2	3	4	5	6		________
7.	1	2	3	4	5	6		________
8.	1	2	3	4	5	6		________
9.	1	2	3	4	5	6		________
10.	1	2	3	4	5	6	7	________
11.	1	2	3	4	5	6	7	________
12.	1	2	3	4	5	6		________

APPENDIX E

LISTS OF THE FORTRAN PROGRAMS
PSEQTBQ, PTBI, AND PCEI

```
C NAME OF PROGRAM = PSEQTBQ
C REVERSE, TOTAL, AND PUNCH SEQ AND TBQ FACTOR SCORES
C PROGRAM WRITES SEQ AND TBQ DATA ON SEPERATE CARDS (FOR REGRESSED GAIN INPUT)
      DIMENSION SR(50,60),ID(50,2),SUM(60),AVE(60)
      K=0
      CLASSN=21
   99 READ(5,96) NUM,N
   96 FORMAT(I4,1X,I2)
      DO 200 I=1,N
      READ(5,50) (ID(I,J),J=1,2),(SR(I,J),J=1,60)
   50 FORMAT(I4,T37,I2,T6,30F1.0,4X,30F1.0)
  200 CONTINUE
      DO 152 J=1,60
      X=0
      I=0
      SUM(J)=0
  153 I=I+1
      IF(SR(I,J).LT.1) GO TO 157
      X=X+1
      SUM(J)=SUM(J)+SR(I,J)
  157 IF(I.LT.N) GO TO 153
  152 AVE(J)=SUM(J)/X
      DO 125 I=1,N
      DO 160 J=1,60
      IF(SR(I,J).GT.0) GO TO 160
      SR(I,J)=AVE(J)
  160 CONTINUE
      WRITE(6,421) (ID(I,J),J=1,2),(SR(I,J),J=1,60)
  421 FORMAT(1X,I4,2X,I2,3X,30F2.0/12X,30F2.0)
      WRITE(7,124) (ID(I,J),J=1,2),(SR(I,J),J=1,60)
  124 FORMAT(I4,2X,I2,3X,30F2.0/12X,30F2.0)
  125 CONTINUE
      WRITE(6,154) NUM,N
  154 FORMAT(1X,I4,1X,I2)
      DO 41 I=1,N
      TI=0
      TC=0
      SI=0
      SC=0
C REVERSE ITEMS:  9,13,14,15,17   (BOTH QUESTIONNAIRES)
      SR(I,9)=(-1.0*SR(I,9))+8.0
      SR(I,13)=(-1.0*SR(I,13))+8.0
      SR(I,14)=(-1.0*SR(I,14))+8.0
      SR(I,15)=(-1.0*SR(I,15))+8.0
      SR(I,17)=(-1.0*SR(I,17))+8.0
      SR(I,39)=(-1.0*SR(I,39))+8.0
      SR(I,43)=(-1.0*SR(I,43))+8.0
      SR(I,44)=(-1.0*SR(I,44))+8.0
      SR(I,45)=(-1.0*SR(I,45))+8.0
      SR(I,47)=(-1.0*SR(I,47))+8.0
C TOTAL ODD ITEMS OF SEQ ("CONSIDERATION" EXPECTED BY STUDENT)
      DO 10 J=1,29,2
   10 SC=SC+SR(I,J)
C TOTAL EVEN ITEMS OF SEQ ("INITIATING STRUCTURE" EXPECTED BY STUDENT)
      DO 20 J=2,30,2
   20 SI=SI+SR(I,J)
C TOTAL ODD ITEMS OF TBQ ("CONSIDERATION" OBSERVED BY STUDENT)
      DO 30 J=31,59,2
   30 TC=TC+SR(I,J)
C TOTAL EVEN ITEMS OF TBQ ("INITIATING STRUCTURE" OBSERVED BY STUDENT)
      DO 40 J=32,60,2
```

```
 40 TI=TI+SR(I,J)
    WRITE(6,43)  (ID(I,J),J=1,2),SC,SI,ID(I,1),TC,TI
 43 FORMAT(1X,I4,2X,I2,3X,2F8.3/1X,I4,7X,2F8.3)
    WRITE(7,44)  (ID(I,J),J=1,2),SC,SI,ID(I,1),TC,TI
 44 FORMAT(I4,2X,I2,3X,2F8.3/I4,7X,2F8.3)
 41 CONTINUE
    K=K+1
    IF(K.EQ.CLASSN) GO TO 100
    GO TO 99
100 STOP
    END
```

```
C NAME OF PROGRAM = PTBI
C THIS PROGRAM COMPUTES AND PUNCHES THE 8 FACTOR SCORES FOR THE TBI INSTRUMENT
     ODIMENSION FWTS(60),SERS(60),R1(14),R2(10),R3(9),R4(8),R5(5),
     1R6(5),R7(5),R8(4),FR1(14),FR2(10),FR3(9),FR4(8),FR5(5),FR6(5),
     2FR7(5),FR8(4),PU(8),SU(50.8),NU(50),XGRA(50),SUM(8),AVE(8)
      K=0
      CLASSN=21
C READ IN ITEM WEIGHTS WITH SIGN
      READ(5,100)(FWTS(I),I=1,60)
  1000FORMAT(F7.4,9F8.4/F7.4,9F8.4/F7.4,9F8.4/F7.4,9F8.4/F7.4,9F8.4/
     1F7.4,9F8.4)
C GROUP ITEM WEIGHTS INTO THEIR RESPECTIVE FACTORS (FR1 THROUGH FR8)
      FR1(1)=FWTS(1)
      FR1(2)=FWTS(9)
      FR1(3)=FWTS(17)
      FR1(4)=FWTS(23)
      FR1(5)=FWTS(24)
      FR1(6)=FWTS(25)
      FR1(7)=FWTS(26)
      FR1(8)=FWTS(29)
      FR1(9)=FWTS(31)
      FR1(10)=FWTS(35)
      FR1(11)=FWTS(42)
      FR1(12)=FWTS(47)
      FR1(13)=FWTS(49)
      FR1(14)=FWTS(52)
      FR2(1)=FWTS(10)
      FR2(2)=FWTS(12)
      FR2(3)=FWTS(16)
      FR2(4)=FWTS(38)
      FR2(5)=FWTS(41)
      FR2(6)=FWTS(46)
      FR2(7)=FWTS(51)
```

```
FR2(8)=FWTS(54)
FR2(9)=FWTS(58)
FR2(10)=FWTS(60)
FR3(1)=FWTS(2)
FR3(2)=FWTS(15)
FR3(3)=FWTS(33)
FR3(4)=FWTS(34)
FR3(5)=FWTS(37)
FR3(6)=FWTS(39)
FR3(7)=FWTS(43)
FR3(8)=FWTS(53)
FR3(9)=FWTS(55)
FR4(1)=FWTS(3)
FR4(2)=FWTS(20)
FR4(3)=FWTS(21)
FR4(4)=FWTS(22)
FR4(5)=FWTS(27)
FR4(6)=FWTS(36)
FR4(7)=FWTS(56)
FR4(8)=FWTS(59)
FR5(1)=FWTS(6)
FR5(2)=FWTS(11)
FR5(3)=FWTS(13)
FR5(4)=FWTS(14)
FR5(5)=FWTS(19)
FR6(1)=FWTS(4)
FR6(2)=FWTS(5)
FR6(3)=FWTS(18)
FR6(4)=FWTS(30)
FR6(5)=FWTS(50)
FR7(1)=FWTS(7)
FR7(2)=FWTS(8)
FR7(3)=FWTS(44)
```

```
      FR7(4)=FWTS(45)
      FR7(5)=FWTS(57)
      FR8(1)=FWTS(28)
      FR8(2)=FWTS(32)
      FR8(3)=FWTS(40)
      FR8(4)=FWTS(48)
C BEGIN READING STUDENT CARDS
C GROUP STUDENT RESPONSES INTO THE EIGHT FACTORS (R1 THROUGH R8)
  109 READ(5,201) NUM,N
  201 FORMAT(I4,1X,I2)
      IC=0
   99 READ(5,200) ID,(SERS(I),I=1,60),SGPA
  200 FORMAT(I4,1X,60F1.0,3X,F2.0)
      IC=IC+1
      XNUM=0
      DENOM=0
      R1(1)=SERS(1)
      R1(2)=SERS(9)
      R1(3)=SERS(17)
      R1(4)=SERS(23)
      R1(5)=SERS(24)
      R1(6)=SERS(25)
      R1(7)=SERS(26)
      R1(8)=SERS(29)
      R1(9)=SERS(31)
      R1(10)=SERS(35)
      R1(11)=SERS(42)
      R1(12)=SERS(47)
      R1(13)=SERS(49)
      R1(14)=SERS(52)
      R2(1)=SERS(10)
      R2(2)=SERS(12)
```

```
R2(3)=SERS(16)
R2(4)=SERS(38)
R2(5)=SERS(41)
R2(6)=SERS(46)
R2(7)=SERS(51)
R2(8)=SERS(54)
R2(9)=SERS(58)
R2(10)=SERS(60)
R3(1)=SERS(2)
R3(2)=SERS(15)
R3(3)=SERS(33)
R3(4)=SERS(34)
R3(5)=SERS(37)
R3(6)=SERS(39)
R3(7)=SERS(43)
R3(8)=SERS(53)
R3(9)=SERS(55)
R4(1)=SERS(3)
R4(2)=SERS(20)
R4(3)=SERS(21)
R4(4)=SERS(22)
R4(5)=SERS(27)
R4(6)=SERS(36)
R4(7)=SERS(56)
R4(8)=SERS(59)
R5(1)=SERS(6)
R5(2)=SERS(11)
R5(3)=SERS(13)
R5(4)=SERS(14)
R5(5)=SERS(19)
R6(1)=SERS(4)
R6(2)=SERS(5)
R6(3)=SERS(18)
R6(4)=SERS(30)
```

```
      R6(5)=SERS(50)
      R7(1)=SERS(7)
      R7(2)=SERS(8)
      R7(3)=SERS(44)
      R7(4)=SERS(45)
      R7(5)=SERS(57)
      R8(1)=SERS(28)
      R8(2)=SERS(32)
      R8(3)=SERS(40)
      R8(4)=SERS(48)
C COMPUTE THE EIGHT FACTOR SCORES FOR EACH STUDENT
      DENOM=0
      XNUM=0
      DO 20 I=1,14
      IF (R1(I).EQ.3.OR.R1(I).EQ.0) GO TO 20
      DENOM=DENOM+ABS(FR1(I))
      IF (R1(I).EQ.1) GO TO 22
      IF (FR1(I).GT.0) GO TO 20
      XNUM=XNUM+ABS(FR1(I))
      GO TO 20
   22 IF(FR1(I).LT.0) GO TO 20
      XNUM=XNUM+ABS(FR1(I))
      GO TO 20
   20 CONTINUE
      IF(DENOM.NE.0) GO TO 21
      PU(1)=555
      GO TO 24
   21 PU(1)=(XNUM/DENOM)*100
   24 DENOM=0
      XNUM=0
      DO 30 I=1,10
      IF (R2(I).EQ.3.OR.R2(I).EQ.0) GO TO 30
   DENOM=DENOM+ABS(FR2(I))
   IF (R2(I).EQ.1) GO TO 32
   IF (FR2(I).GT.0) GO TO 30
   XNUM=XNUM+ABS(FR2(I))
   GO TO 30
32 IF(FR2(I).LT.0) GO TO 30
   XNUM=XNUM+ABS(FR2(I))
   GO TO 30
30 CONTINUE
   IF(DENOM.NE.0) GO TO 31
   PU(2)=555
   GO TO 34
31 PU(2)=(XNUM/DENOM)*100
34 DENOM=0
   XNUM=0
   DO 40 I=1,9
   IF (R3(I).EQ.3.OR.R3(I).EQ.0) GO TO 40
   DENOM=DENOM+ABS(FR3(I))
   IF (R3(I).EQ.1) GO TO 42
   IF (FR3(I).GT.0) GO TO 40
   XNUM=XNUM+ABS(FR3(I))
   GO TO 40
42 IF(FR3(I).LT.0) GO TO 40
   XNUM=XNUM+ABS(FR3(I))
   GO TO 40
40 CONTINUE
   IF(DENOM.NE.0) GO TO 41
   PU(3)=555
   GO TO 44
41 PU(3)=(XNUM/DENOM)*100
44 DENOM=0
   XNUM=0
   DO 50 I=1,8
   IF  (R4(I).EQ.3.OR.R4(I).EQ.0)  GO TO 50
   DENOM=DENOM+ABS(FR4(I))
   IF  (R4(I).EQ.1)  GO TO 52
   IF  (FR4(I).GT.0)  GO TO 50
   XNUM=XNUM+ABS(FR4(I))
   GO TO 50
52 IF(FR4(I).LT.0)  GO TO 50
   XNUM=XNUM+ABS(FR4(I))
   GO TO 50
50 CONTINUE
   IF(DENOM.NE.0)  GO TO 51
   PU(4)=555
   GO TO 54
51 PU(4)=(XNUM/DENOM)*100
54 DENOM=0
   XNUM=0
   DO 60 I=1,5
   IF  (R5(I).EQ.3.OR.R5(I).EQ.0)  GO TO 60
   DENOM=DENOM+ABS(FR5(I))
   IF  (R5(I).EQ.1)  GO TO 62
   IF  (FR5(I).GT.0)  GO TO 60
   XNUM=XNUM+ABS(FR5(I))
   GO TO 60
62 IF(FR5(I).LT.0)  GO TO 60
   XNUM=XNUM+ABS(FR5(I))
   GO TO 60
60 CONTINUE
   IF(DENOM.NE.0)  GO TO 61
   PU(5)=555
   GO TO 64
61 PU(5)=(XNUM/DENOM)*100
```

```
64 DENOM=0
   XNUM=0
   DO 70 I=1,5
   IF (R6(I).EQ.3.OR.R6(I).EQ.0) GO TO 70
   DENOM=DENOM+ABS(FR6(I))
   IF (R6(I).EQ.1) GO TO 72
   IF (FR6(I).GT.0) GO TO 70
   XNUM=XNUM+ABS(FR6(I))
   GO TO 70
72 IF(FR6(I).LT.0) GO TO 70
   XNUM=XNUM+ABS(FR6(I))
   GO TO 70
70 CONTINUE
   IF(DENOM.NE.0) GO TO 71
   PU(6)=555
   GO TO 74
71 PU(6)=(XNUM/DENOM)*100
74 DENOM=0
   XNUM=0
   DO 80 I=1,5
   IF (R7(I).EQ.3.OR.R7(I).EQ.0) GO TO 80
   DENOM=DENOM+ABS(FR7(I))
   IF (R7(I).EQ.1) GO TO 82
   IF (FR7(I).GT.0) GO TO 80
   XNUM=XNUM+ABS(FR7(I))
   GO TO 80
82 IF(FR7(I).LT.0) GO TO 80
   XNUM=XNUM+ABS(FR7(I))
   GO TO 80
80 CONTINUE
   IF(DENOM.NE.0) GO TO 81
   PU(7)=555
   GO TO 84
   81 PU(7)=(XNUM/DENOM)*100
   84 DENOM=0
      XNUM=0
      DO 90 I=1,4
      IF (R8(I).EQ.3.OR.R8(I).EQ.0) GO TO 90
      DENOM=DENOM+ABS(FR8(I))
      IF (R8(I).EQ.1) GO TO 92
      IF (FR8(I).GT.0) GO TO 90
      XNUM=XNUM+ABS(FR8(I))
      GO TO 90
   92 IF(FR8(I).LT.0) GO TO 90
      XNUM=XNUM+ABS(FR8(I))
      GO TO 90
   90 CONTINUE
      IF(DENOM.NE.0) GO TO 91
      PU(8)=555
      GO TO 94
   91 PU(8)=(XNUM/DENOM)*100
C PUNCH THE 8 FACTOR SCORES AND THE GRADE GIVEN THE INSTRUCTOR FOR EACH STUDENT
C STORE  PU(I) IN A 2 DIMENSIONAL ARRAY
   94 CONTINUE
      DO 777 J=1,8
  777 SU(IC,J)=PU(J)
      NU(IC)=ID
      XGRA(IC)=SGRA
      IF(IC.EQ.N) GO TO 98
      GO TO 99
C AVERAGE  EACH PU(I) EXCLUDING 555 (BLANK) RESPONSES
   98 DO 152 J=1,8
      X=0
      I=0
      SUM(J)=0
  153 I=I+1
      IF(SU(I,J).EQ.555) GO TO 157
      X=X+1
      SUM(J)=SUM(J)+SU(I,J)
  157 IF(I.LT.N) GO TO 153
  152 AVE(J)=SUM(J)/X
C AVERAGE  XGRA EXCLUDING ZERO RESPONSES
      X=0
      I=0
      AGRA=0
      SMGRA=0
 1530 I=I+1
      IF(XGRA(I).EQ.0) GO TO 1570
      X=X+1
      SMGRA=SMGRA+XGRA(I)
 1570 IF(I.LT.N) GO TO 1530
      AGRA=SMGRA/X
      I=0
C PRINT AND PUNCH PU(I) SUBSTITUTING AVERAGE PU(I)'S FOR MISSING VALUES
      WRITE(6,511) NUM,N
  511 FORMAT(1X,I4,1X,I2)
      DO 161 I=1,N
      DO 160 J=1,8
      IF(SU(I,J).NE.555) GO TO 160
      SU(I,J)=AVE(J)
  160 CONTINUE
      IF(XGRA(I).NE.0) GO TO 469
      XGRA(I)=AGRA
  469 WRITE (7,501) NU(I),(SU(I,J),J=1,8),XGRA(I)
  501 FORMAT(I4,1X,8F7.1,3X,F4.0)
  161 WRITE (6,500) NU(I),(SU(I,J),J=1,8),XGRA(I)
```

```
500 FORMAT(1X,I4,1X,8F7.1,3X,F4.0)
    K=K+1
    IF(K.EQ.CLASSN) GO TO 164
    GO TO 109
164 STOP
    END
```

```
C PROGRAM NAME = PCEI
C PUNCH "FORM A" GENERAL RATING AND TOTAL OF 11 SPECIFIC RATINGS
      DIMENSION ID(50,7),SR(50,12),SUM(12),AVE(12),X(12)
      K=0
      W=.857143
      CLASSN=21
   10 READ(5,11) NUM,N
   11 FORMAT(I4,1X,I2)
      DO 500 I=1,N
      READ(5,15) (ID(I,J),J=1,7),(SR(I,J),J=1,12)
   15 FORMAT(I4,1X,I1,1X,I2,1X,I1,1X,I1,1X,I1,1X,I1,6X,F1.0,6X,11F1.0)
  500 CONTINUE
      DO 321 J=1,12
      AVE(J)=0
      SUM(J)=0
      X(J)=0
  321 CONTINUE
      DO 71 I=1,N
      IF(SR(I,1).LT.1) GO TO 71
      X(1)=X(1)+1
      SUM(1)=SUM(1)+SR(I,1)
   71 CONTINUE
      AVE(1)=SUM(1)/X(1)
      DO 72 I=1,N
      IF(SR(I,2).LT.1.OR.SR(I,2).EQ.7) GO TO 72
      X(2)=X(2)+1
      SUM(2)=SUM(2)+SR(I,2)
   72 CONTINUE
      AVE(2)=SUM(2)/X(2)
      DO 73 I=1,N
      IF(SR(I,3).LT.1.OR.SR(I,3).EQ.6) GO TO 73
      X(3)=X(3)+1
      SUM(3)=SUM(3)+SR(I,3)
```

```
73 CONTINUE
   AVE(3)=SUM(3)/X(3)
   DO 74 I=1,N
   IF(SR(I,4).LT.1.OR.SR(I,4).EQ.6) GO TO 74
   X(4)=X(4)=1
   SUM(4)=SUM(4)=SR(I,4)
74 CONTINUE
   AVE(4)=SUM94)/X(4)
   DO 75 I=1,N
   IF(SR(I,5).LT.1.OR.SR(I,5).EQ.6) GO TO 75
   X(5)=X(5)=1
   SUM(5)=SUM95)=SR(I,5)
75 CONTINUE
   AVE(5)=SUM(5)/X(5)
   DO 76 I=1,N
   IF(SR(I,6).LT.1.OR.SR(I,6).EQ.6) GO TO 76
   X(6)=X(6)=1
   SUM(6)-SUM(6)=SR(I,6)
76 CONTINUE
   AVE(6)=SUM(6)/X(6)
   DO 77 I=1,N
   IF(SR(I,7).LT.1.OR.SR(I,7).EQ.6) GO TO 77
   X(7)=X(7)=1
   SUM(7)=SUM(7)+SR(I,7)
77 CONTINUE
   AVE(7)=SUM(7)/X(7)
   DO 78 I=1,N
   IF(SR(I,8).LT.1.OR.SR(I,8).EQ.6) GO TO 78
   X(8)=X(8)+1
   SUM(8)=SUM(8)+SR(I,8)
78 CONTINUE
   AVE(8)=SUM(8)/X(8)
```

```
      DO 79 I=1,N
      IF(SR(I,9).LT.1.OR.SR(I,9).EQ.6) GO TO 79
      X(9)=X(9)+1
      SUM(9)=SUM(9)+SR(I,9)
   79 CONTINUE
      AVE(9)=SUM(9)/X(9)
      DO 80 I=1,N
      IF(SR(I,10).LT.1.OR.SR(I,10).EQ.7) GO TO 80
      X(10)=X(10)+1
      SUM(10)=SUM(10)+SR(I,10)
   80 CONTINUE
      AVE(10)=SUM(10)/X(10)
      DO 81 I=1,N
      IF(SR(I,11).LT.1.OR.SR(I,11).EQ.7) GO TO 81
      X(11)=X(11)+1
      SUM(11)=SUM(11)+SR(I,11)
   81 CONTINUE
      AVE(11)=SUM(11)/X(11)
      DO 82 I=1,N
      IF(SR(I,12).LT.1.OR.SR(I,12).EQ.6) GO TO 82
      X(12)=X(12)+1
      SUM(12)=SUM(12)+SR(I,12)
   82 CONTINUE
      AVE(12)=SUM(12)/X(12)
      DO 125 I=1,N
      DO 160 J=1,12
      IF(SR(I,J).GT.0) GO TO 160
      SR(I,J)=AVE(J)
  160 CONTINUE
      WRITE(6,213) (ID(I,J),J=1,7),(SR(I,J),J=1,12)
  2130FORMAT(1X,I4,1X,I1,1X,I2,1X,I1,1X,I1,1X,I1,1X,I1,6X,F3.0,6X,
       111F3.0)
      WRITE(7,124) (ID(I,J),J=1,7),(SR(I,J),J=1,12)
  124 FORMAT(I4,1X,I1,1X,I2,1X,I1,1X,I1,1X,I1,1X,I1,6X,F3.0,6X,11F3.0)
  125 CONTINUE
      WRITE(6,154) NUM,N
  154 FORMAT(1X,I4,1X,I2)
      DO 55 I=1,N
      D=0
      S=0
      IF(SR(I,2).EQ.7) GO TO 20
      D=D+1
      S=S+(SR(I,2)*W)
   20 IF(SR(I,3).EQ.6) GO TO 30
      D=D+1
      S=S+SR(I,3)
   30 IF(SR(I,4).EQ.6) GO TO 40
      D=D+1
      S=S+SR(I,4)
   40 IF(SR(I,5).EQ.6) GO TO 50
      D=D+1
      S=S+SR(I,5)
   50 IF(SR(I,6).EQ.6) GO TO 60
      D=D+1
      S=S+SR(I,6)
   60 IF(SR(I,7).EQ.6) GO TO 70
      D=D+1
      S=S+SR(I,7)
   70 IF(SR(I,8).EQ.6) GO TO 800
      D=D+1
      S=S+SR(I,8)
  800 IF(SR(I,9).EQ.6) GO TO 90
      D=D+1
      S=S+SR(I,9)
```

```
 90 IF(SR(I,10).EQ.7) GO TO 100
    D=D+1
    S=S+(SR(I,10)*W)
100 IF(SR(I,11).EQ.7) GO TO 110
    D=D+1
    S=S+(SR(I,11)*W)
110 IF(SR(I,12).EQ.6) GO TO 120
    D=D+1
    S=S+SR(I,12)
120 Y=S/D
    WRITE(6,54) (ID(I,J),J=1,7),SR(I,1),Y
 54 FORMAT(1X,I4,1X,I1,1X,I2,1X,I1,1X,I1,1X,I1,1X,I1,6X,F4.0,3X,F9.5)
    WRITE(7,44) (ID(I,J),J=1,7),SR(I,1),Y
 44 FORMAT(I4,1X,I1,1X,I2,1X,I1,1X,I1,1X,I1,1X,I1,6X,F4.0,3X,F9.5)
 55 CONTINUE
    K-K+1
    IF(K.EQ.CLASSN) GO TO 130
    GO TO 10
130 STOP
    END
```

APPENDIX F

WRITTEN INSTRUCTIONS GIVEN TO STUDENTS ON FIRST DAY OF DATA COLLECTION

INSTRUCTIONS

I am a student in educational psychology and I am trying to develop a questionnaire which will measure students' expectations for their instructor's behavior. I have your instructor's permission to use these next few minutes of class time during which I will ask you to respond to my questionnaire.

In the upper right hand corner of each questionnaire there are two blank lines. On the top one, please write any number, name, or word which you will be likely to remember. I am requesting that you use this mark because I will return one day around the end of the quarter at which time I will ask you to identify your questionnaire. With your help I will be able to separate out the questionnaires of those students who have dropped the course. On the second blank line, please write your instructor's last name (this information will help me to keep your questionnaire grouped with the questionnaires of the other students in your class).

Please follow the instructions at the top of the questionnaire and be sure to respond to each question.

Also please understand that this questionnaire has nothing to do with the content of this course or your grade in this course. The results will not be shown to your instructor or, for that matter, tabulated until well after the end of this quarter.

If you have not completed the questionnaire in the 10 or so minutes that I am here, please continue immediately and try to finish it before you form any impression of your instructor. You can then turn the completed questionnaire in to your instructor at the end of the class and he will forward it to me.

If you have any questions regarding these instructions, please feel free to ask them. If you would like to know some of the details of my work and the development of this questionnaire, I will be happy to answer your questions when I return at the end of the quarter.

Thank you very much for your cooperation.

APPENDIX G

PROCTOR'S INSTRUCTIONS FOR COLLECTION OF DATA ON THE SECOND DAY

PROCTOR'S DIRECTIONS FOR ADMINISTRATION

A. Sort through the Student Expectation Questionnaires making sure that everyone who filled one out recognizes and knows his identification mark. At the end of the sorting, ask those who did not recognize their mark to sort through the remaining papers and to try to identify their own.

B. Teacher Behavior Questionnaires
   1. Hand out the Teacher Behavior Questionnaire (TBQ) to everyone who filled out the Student Expectation Questionnaire, and instruct them to put the same identification mark on their new instrument.
   2. Ask students filling out the TBQ to read the instructions and answer all the items.
   3. Make it clear that their responses will in no way affect their grade in the course (the data won't even be analyzed until next quarter).

C. Remaining Students
   1. Tell the remaining students that you are handing out copies of the two College of Education teacher evaluation instruments and that there are two sets of instructions and two answer sheets.
   2. Make it clear that these are the forms ordinarily required of their instructor and that they will aid him in improving the course.
   3. Tell them to be sure to put the instructor's name on both answer sheets but to not sign their own name. Also warn everyone that there are some sets of instructions which wrongly direct students to leave off the instructor's name.
   4. Hand out the student evaluation of teaching forms with the short note attached.
   5. Ask students to return the instructions, the answer sheets, and the notes paper clipped together.

D. Additional instructions to TBQ students
   1. Tell the students working on the TBQ to bring the completed instrument forward for more instructions when they are finished.
   2. When students finishing the TBQ do come forward, collect their completed instruments and give them the student evaluation of teaching instruments with the long note attached.

3. After everyone has begun work on the student evaluation of teaching instrument announce that:
    a. (once again) Everyone should return all forms and the note clipped together.
    b. Everyone who filled out the TBQ should put their identification mark on the two answer sheets because otherwise their responses will be of no help to this research project.

E. Try to check on the identification marks when the forms with the long notes are returned. But, if individuals don't want to mark their answer sheets, don't press them.

F. When all instruments have been returned be prepared to answer the questions that anyone might have regarding the purpose of the research.

Anyone coming late should be asked if they filled out a Student Expectation Questionnaire at the beginning of the quarter. If they did, find it and make sure that they know their identification mark. Then give them a Teacher Behavior Questionnaire with the proper verbal instructions. If they did not fill out a Student Expectation Questionnaire, give them the two teacher evaluation instruments and the appropriate note.

APPENDIX H

INSTRUCTION NOTES NUMBERS 1 AND 2

NOTE NUMBER 1

These forms are self explanatory. Please respond fully to both of them, and write only on the answer sheets. You are free to leave when you finish.

Please leave the completed forms at the front of the room when you depart.

Thanks for your cooperation

NOTE NUMBER 2

These forms are self explanatory. Please respond fully to both of them, and write only on the answer sheets.

As a part of the research being done with the two questionnaires you have already filled out, you are asked to write the same identification mark used on these previous instruments in the upper right hand corner of the present two answer sheets.

Be assured that this data cannot be traced to you and that it will, in no way, affect your grade in this class.

Please leave the completed forms at the front of the room when you depart.

You are free to leave when you are finished. However, if you would like to learn about the purpose of this research, I will be available for questions when everyone is finished.

Thanks very much for your cooperation

APPENDIX I

BROWN'S REGRESSED GAIN PROGRAM

```
C
C      REGRESSED GAIN PROGRAM---1970 VERSION---WRITTEN FOR FT-2
C
C      PROGRAMMER KEITH BROWN
C           REVISION  18 - 3 - 71     WHG   LBS
C
C     LIMITS:  54 VARIABLES, ANY NUMBER OF SUBJECTS, NO INCOMPLETE DATA.
C
C THE PUNCHED OUTPUT CONSISTS OF REGRESSED GAIN SCORES VARYING ABOUT 50.
C
C  PROGRAM REQUIRES TWO(2) SCRATCH UNITS (8 & 9) AND RUNS IN SMALL CORE.
C  //GO.FT08F001 DD UNIT=SYSDA,SPACE=(CYL,(4,2)),VOL=SER=SYS001
C  //GO.FT09F001 DD UNIT=SYSDA,SPACE=(CYL,(4,2)),VOL=SER=SYS002
C  //GO.SYSIN DD *
C
C
C     CARD ORDER
C            1.  TITLE CARD
C            2.  PARAMETER CARD WITH COLS. AS FOLLOWS
C                1-5   (    )   NO. OF CASES--N. TOTAL OF ALL SUB GROUPS.
C                6-10  (    )   NUMBER OF VARIABLES FOR WHICH THERE ARE
C                       PRE AND POST SCORES.
C                13-15 (    )   IDECK--DECK NUMBER FOR PUNCHED OUTPUT
C                20  (     ) NO OF GROUPS -- MAXIMUM IS EIGHT.
C                21-25 (   ) NO. OF SUBJECTS IN FIRST GROUP. MEANS OF OTHER
C                       GROUPS WILL BE ADJUSTED TO THIS GROUP'S MEAN.
C                26-30 AND ETC.  NO. OF SUBJECTS IN SUBSEQUENT GROUPS IN
C                       I5 FIELDS. EIGHT IS THE MAXIMUM NO OF GROUPS.
C                69   NICR  INCREMENT FOR CARD COUNT IN SET , I1
C                       LETS YOU NUMBER CARDS UNIQUELY FROM SEVERAL RUNS
C                       SO THAT YOU CAN SORT THEM TOGETHER OR MERGE.
```

```
C                70   NTAG    GRADE LEVEL CODE -  SUB CARD SET  ,I1
C                       LETS YOU PUT IN SUBGROUP UNDER 3 DIGIT DECK NO.
C                71-72 (    )   NO. VAR. FORMAT CARDS--BLANK = 1
C            3.  VARIABLE FORMAT CARD--REQUIRES AD1,AD2 FORMAT ON
C                SPECIFICATION FOR THE PRE DATA CARD.  THESE ARE A8 AND
C                A3 FIELDS.
C  * * * * * *   CAUTION - FORMAT MUST READ ENTIRE RPT ENTIRE DATA SET WITH
C       NO RPT NO ALPHABETIC FIELD IN POST TEST DATA.
C     READ (5,FMT,END=99)  AD1,AD2,(DATA(K1),K1=1,L2)
C            4.  PRE TEST DATA FOR SUBJECT 1
C            5.  POST TEST DATA FOR SUBJECT 1
C            NOTE:  REPEAT 4 & 5 FOR ALL SUBJECTS.  IT IS POSSIBLE TO
C                   REPEAT 1 - 5 ALSO.
C
      DOUBLE PRECISION  R, DSD, DMN, SDXSD
      REAL*8  AD1
      DIMENSION PLUS (8,106),DM(8,106)
      DIMENSION  DSD1 (106),DMN1 (106),TITLE(20),NPG(8)
      COMMON R(108),DMN(216),DSD(216),DATA(216),FMT(200)
      EQUIVALENCE  (DM(1,1),  PLUS(1,1))
      CALL ERRSET ( 207, 256, -1, 1 )
      CALL ERRSET ( 208, -1, -1, 1 )
      CALL ERRSET ( 209, 256, -1, 1 )
      CALL ERRSET ( 261, 256, -1, 1 )
      IERCNT = 0
C
  100 FORMAT (20A4)
  105 FORMAT (3I5, T71, I2,T16,9I5, T69,2I1)
  110 FORMAT ('0', 20A4 / '0', T5, 'NUMBER OF CASES =  ', I5 / '0', T5,
     X'NUMBER OF VARIABLES =  ', 15 / '0', T5, 'N1,N2,N3,N4,N5,N6,N7,N8=
     X ',8I5/'0',
     X    VARIABLE FORMAT IS: ',(T25,20A4/))
  120 FORMAT (1H2, 5X,   'MEANS OF PRE-TEST DATA.'/)
  125 FORMAT (7(I8, 1H),F10.5))
  130 FORMAT (1H2,5X,   'STANDARD DEVIATIONS OF PRE-TEST DATA'/)
  135 FORMAT (1H2, 5X,   'MEANS OF POST TEST - PRE TEST GAINS'/)
  140 FORMAT (1H2,5X,  'STANDARD DEVIATIONS OF GAINS'/)
  145 FORMAT ('2', 5X, 'CORRELATION BTWN PRE TEST AND GAIN'/)
C
    5 READ (5,100, END = 99) TITLE
      REWIND 9
      READ (5,105) N, L, IDECK, NFMT ,NG,(NPG(I),I=1,8),NICR,NTAG
      IF(NG.EQ.0)NG = 1
      IF(NG.EQ.1) NPG(1) = N
      IF (NFMT .EQ. 0 ) NFMT = 1
      NFMT = NFMT *20
      READ (5,100) (FMT(I), I = 1, NFMT)
      WRITE (6, 98 )
   98 FORMAT(/'1','THIS REVISION, OF APRIL 10,1972, EHB,  UPDATED AND
     XCORRECTED THE COMMENT CARDS.' /
     X  1X, 'REVISION OF 5/5/72 - CHANGED I/O ON DIRECT ACCESS TO FREE F
     XORMAT, SEE RUNAPRO4 FOR REASON.'/
     X  1X,  'REVISION OF 5/8/72 - CORRECTED EQUIVALENCE STATEMENT,
     X DOUBLE PRECISION ON DSQRT, R, DSD, & DMN.' /
     X  1X,  'REVISION OF 5/9/72,  ERRSETS ADDED,  DOUBLE PREC  SDXSD.')
      WRITE (6,110) TITLE,N,L,(NPG(I),I=1,8),(FMT(I),I=1,NFMT)
  763 AN=N
      L2=2*L
      DO 10 I=1,L
      DO2110 K1=1,8
      DM(K1,I) = 0.0
 2110 PLUS(K1,I) = 0.
   10 R(I) = 0.0
      DO 15 I = 1, L2
      DMN(I) = 0.0
   15 DSD(I) = 0.0
```

```
C
      DO 35 IX = 1,NG
       NN = NPG(IX)
      IF(NN) 74,35,301
   74 WRITE(6,619) IX
  619 FORMAT(1X,I2,'  GROUP HAS NEG ENTRIES. CHECK PARM. CARD.')
      STOP 13
  301  DO 35 II = 1,NN
  176 READ (5,FMT,END=99)  AD1,AD2,(DATA(K1),K1=1,L2)
  177 DO 20 K1 = 1, L
      KGAIN=K1+L
      DATA(KGAIN)=DATA(KGAIN)-DATA(K1)
      AII=0
      AII=ABS(DATA(KGAIN))
      WRITE(6,6) AD1,AD2,AII
      WRITE(7,6) AD1,AD2,AII
    6 FORMAT(1X,A6,A3,2F10.3)
   20 PLUS(IX,K1) = PLUS(IX,K1)  + DATA  (K1)
      WRITE (9)       AD1,AD2,IX,(DATA(K1),K1=1,L2)
   35  CONTINUE
      REWIND 8
      REWIND 9
      WRITE(6,608)(J,J=1,L)
  608 FORMAT(' ROW 1 = PRETEST MEANS FOR GP 1. NEXT   ROWS = NECESSARY
     X ADJUSTMENTS  TO GENERATE THAT SCORE FOR OTHER   GPS. '/(20I6)  )
      DO 302 K1=1,L
      DM(1,K1) = DM(1,K1)/NPG(1)
      IF (NG.EQ.1)  GO TO 302
      DO 302 II = 2,NG
       DM(II,K1) = DM(1,K1)-DM(II,K1)/NPG(II)
  302 CONTINUE
  279 DO 281 I=1,NG
  281 WRITE(6,609)I,(DM(I,K1),K1=1,L)
  609 FORMAT('0',I3,') ',(20F6.2/))
  285 DO 282 I = 1,N
      READ  (9)      AD1,AD2,IX,(DATA(K1),K1=1,L2)
      DO2120 K1=1,L
      KGAIN=K1+L
      IF(IX.EQ.1) GO TO 283
      DATA(K1)= DATA(K1)+PLUS(IX,K1)
  283 DMN(K1)  = DMN(K1)+DATA(K1)
      DMN(KGAIN)  = DMN(KGAIN)+DATA(KGAIN)
      DSD(K1)  = DSD(K1)  + DATA(K1)  ** 2
      DSD(KGAIN)  = DSD(KGAIN)  + DATA(KGAIN)  ** 2
      R(K1)  = R(K1)  + DATA(K1)  * DATA(KGAIN)
 2120 CONTINUE
  282 WRITE (8)     AD1,AD2,    (DATA(K1),K1=1,L2)
C
C
      DO 40 K = 1,L
      KGAIN= K+L
      DMN(K)  = DMN(K)  / AN
      DMN(KGAIN)  = DMN(KGAIN)/AN
      WRITE ( 6,8) DMN (KGAIN)
 8    FORMAT ( 20X,F10.5)
      DSD(K) = DSQRT(DSD(K)/AN -  DMN(K)**2)
      DSD(KGAIN)  = DSQRT(DSD(KGAIN)/AN-DMN(KGAIN)  ** 2 )
      SDXSD = DSD(K)  * DSD(KGAIN)
      IF(SDXSD) 45,45,50
   45 R(K ) = 0.0
      GO TO 40
   50 R(K ) =(R(K )  /  AN - DMN(K )  * DMN(KGAIN))/SDXSD
   40 CONTINUE
```

```
C
      WRITE (6, 120)
      WRITE (6, 125) (K1, DMN(K1), K1 = 1, L )
      WRITE (6, 130)
      WRITE (6, 125)            (K1, DSD(K1), K1 = 1,L )
      WRITE             (6, 135)
      DO 60 K1 = 1,L
      K2 = K1 + L
      DMN1(K1) = DMN(K2)
   60 DSD1(K1) = DSD(K2)
C
C     MATRICES ARE REORDERED TO INDEX OUTPUT
C
      WRITE (6, 125) (K2,DMN1(K2),K2=1,L )
      WRITE             (6, 140)
      WRITE (6, 125) (K2,DSD1(K2), K2=1,L )
      WRITE             (6, 145)
      WRITE (6,125) (K1, R(K1), K1 = 1, L )
      CALL REGS(N,L,IDECK, NICR,NTAG )
      GO TO 5
   99 STOP      9
      END
C
C
      SUBROUTINE REGS(N,L,IDECK, NICR, NTAG)
C
C     PURPOSE:  TO ADJUST POST SCORES FOR PRE STANDING
C
C     R = CORRELATION OF PRE-POST      DMN = MEAN OF PRE
C     DMN + L = MEAN OF POST           DSD = STANDARD DEV. OF PRE
C     DSD + L = STANDARD DEV. OF POST  ADJ = ADJUSTED SCORE
C     BETA = BETA WEIGHT               CON = CONSTANT
```

```
C     DATA = PRE-POST SCORES
C
      DOUBLE PRECISION  R, DSD, DMN, SDXSD
      REAL*8  AD1
      DIMENSION ADJ(108),BETA(108),CON(108)
      COMMON R(108),DMN(216),DSD(216),DATA(216),FMT(200)
C
C
C
      IROV= L/10.0+.99
      L2=L+L
      REWIND 8
      WRITE (6,100)
  100 FORMAT('1','VAR',3X,'BETA',5X,'CONSTANT')
      DO 5 J = 1, L
    5 ADJ(J)=0
      DO 10 I = 1, L
      K1 = L + I
      BETA(I)=R(I)*DSD(K1)/DSD(I)
      CON(I)=DMN(K1)-BETA(I)*DMN(I)
   10 WRITE (6,105)   I, BETA(I),  CON(I)
  105 FORMAT (1X, I3, 2F10.3)
      WRITE (6,110)
  110 FORMAT('1','REGRESSED GAIN SCORES ')
      DO 32 JX=1,N
   15 READ (8,     END = 35) AD1,AD2,    (DATA(I ), I  = 1, L2)
      DO 20 I = 1, L
      K1=L  +I
      R(I)=DATA(I)*BETA(I)+CON(I)
   20 ADJ(I)=DABS(DATA(K1)-R(I))
      KP = 1
      LP = L
      IF(IROV.GT.1) LP=9+KP
      DO 30  IRV=1,IROV
      IRN  =  IRV + NICR
      IF(LP.GT.L) LP=L
C     LOOK STUPID --- BE SURE YOU ARE READING FORMAT IN F MODE
      WRITE( 7,130) IDECK,NTAG,AD1,AD2,IRN,(ADJ(J),J=KP,LP)
  130 FORMAT (I3,I1 ,A8,A3,T76,'OGA', I2,T16,10(F6.2))
      WRITE( 6,131) IDECK,NTAG,AD1,AD2,IRN,(ADJ(J),J=KP,LP)
  131 FORMAT (2X,I3,I1 ,A8,A3,T78,'OGA', I2,T18,10(F6.2))
      KP=KP+10
   30 LP=LP+10
   32 CONTINUE
   35 RETURN
      END
```

APPENDIX J

MEANS AND STANDARD DEVIATIONS FOR ALL RAW SCORES CLASSIFIED AS TO COLLEGE STANDING, UNDERGRADUATE G.P.A., ESTIMATE OF CURRENT GRADE, COLLEGE OF ENROLLMENT, REASON FOR TAKING COURSE, PREVIOUS COURSE WORK WITH INSTRUCTOR, AND KNOWLEDGE OF INSTRUCTOR'S METHODS

Categories				Variables														
		N		EC	EI	OC	OI	TO	TS	TV	TP	TK	TC	TT	TE	TG	CG	CT
College Standing	NR.	0	$\overline{X}$															
			S.D.															
	FR.	2	$\overline{X}$	34.00	54.00	37.00	48.00	99.60	84.80	93.15	91.71	60.70	100.00	98.50	89.15	4.00	3.00	1.93
			S.D.	4.24	12.73	0.0	4.24	0.57	21.50	9.69	11.74	43.13	0.0	2.12	15.34	1.41	0.0	0.01
	SO.	41	$\overline{X}$	32.81	50.42	36.45	44.34	97.85	86.12	87.27	89.38	93.66	87.36	75.01	87.22	2.93	2.05	1.91
			S.D.	10.44	9.62	10.78	9.07	4.05	17.67	23.53	22.84	16.80	26.96	32.46	28.31	1.89	1.05	0.50
	JR.	110	$\overline{X}$	36.61	53.98	35.35	44.52	94.38	82.43	86.11	86.58	84.40	86.80	72.53	92.34	3.85	2.59	2.18
			S.D.	16.16	11.60	9.86	7.64	12.47	23.38	19.60	22.08	25.82	23.47	36.64	17.93	2.57	1.17	0.77
	SR.	75	$\overline{X}$	30.67	54.29	36.85	45.14	95.62	90.78	82.85	92.48	85.31	93.40	88.32	93.96	3.05	2.25	2.04
			S.D.	14.12	11.22	10.70	7.06	10.96	16.00	21.51	13.38	24.21	16.57	23.40	18.87	2.51	1.20	0.73
	GR.	113	$\overline{X}$	36.56	52.63	38.28	44.46	91.63	84.04	92.07	90.85	87.78	91.80	87.39	93.19	3.11	2.49	1.94
			S.D.	15.20	12.79	9.88	7.36	15.76	27.38	14.20	18.96	23.87	15.13	25.90	15.02	2.33	1.13	0.70
	OTH.	6	$\overline{X}$	30.02	45.50	36.07	35.67	93.32	94.87	84.22	98.00	100.00	91.92	86.12	94.57	2.33	1.83	1.99
			S.D.	6.40	10.03	6.16	7.12	11.71	9.23	15.31	2.28	0.0	10.53	14.21	13.31	1.97	0.75	0.74
Undergraduate G.P.A.	NR	2	$\overline{X}$	30.40	64.50	41.50	54.50	100.00	100.00	83.70	100.00	50.00	92.90	98.50	100.00	3.00	2.50	1.70
			S.D.	9.05	10.61	2.12	4.95	0.0	0.0	23.05	0.0	70.71	10.04	2.12	0.0	2.83	2.12	0.92
	A	72	$\overline{X}$	37.34	54.10	37.19	44.25	92.50	79.96	83.79	88.36	85.42	90.52	83.27	92.03	3.63	2.61	2.18
			S.D.	17.16	12.04	11.09	7.52	14.74	29.29	23.70	21.15	24.52	22.05	28.25	20.49	2.54	1.19	0.81
	B	195	$\overline{X}$	34.38	52.88	36.19	43.80	94.24	86.35	87.95	89.52	87.18	89.91	80.76	92.44	3.21	2.42	2.02
			S.D.	14.60	11.47	10.25	7.54	12.53	21.13	17.79	19.98	23.63	20.06	31.17	18.31	2.44	1.14	0.71
	C	75	$\overline{X}$	33.70	52.58	37.78	46.13	95.52	88.17	89.87	91.50	89.26	90.01	81.74	92.36	3.27	2.23	1.95
			S.D.	13.08	12.12	8.96	7.68	11.58	19.04	17.41	16.35	21.93	18.47	31.80	18.71	2.23	1.12	0.59
	<C	3	$\overline{X}$	24.00	42.00	37.16	46.67	92.53	77.97	89.30	93.33	72.33	91.03	65.30	92.77	2.67	1.67	1.90
			S.D.	3.46	2.65	5.93	11.15	11.23	31.17	18.53	11.55	37.08	15.53	32.45	12.53	2.89	0.58	1.01
	NR	0	$\overline{X}$															
			S.D.															
	A	170	$\overline{X}$	31.89	54.05	37.25	44.98	94.89	88.33	89.41	90.56	89.76	89.84	80.87	92.19	2.98	2.29	1.90
			S.D.	12.83	11.89	10.02	7.76	12.59	20.24	16.58	19.79	22.12	19.91	30.12	20.19	2.42	1.16	0.68

APPENDIX J (Continued)

Categories		N		EC	EI	OC	OI	TO	TS	TV	TP	TK	TC	TT	TE	TG	CG	CT
Estimated grade in Course	B	115	$\overline{X}$	36.81	51.15	36.76	43.91	93.68	82.47	88.30	90.71	84.09	90.22	81.32	94.13	3.40	2.49	2.09
			S.D.	15.13	11.55	9.71	7.27	13.65	24.06	19.90	17.09	25.30	21.76	31.60	14.32	2.27	1.13	0.68
	C	18	$\overline{X}$	43.40	56.33	35.73	44.57	91.18	76.44	79.78	84.02	75.85	89.46	82.13	90.98	4.11	2.50	2.34
			S.D.	21.61	10.19	8.95	9.58	12.90	24.05	19.17	21.75	30.01	13.98	27.30	12.99	2.97	1.25	0.85
	D	1	$\overline{X}$	56.00	53.00	41.00	55.00	69.90	81.10	100.30	17.00	100.00	43.00	0.0	100.00	2.00	4.00	2.18
			S.D.															
	F	0	$\overline{X}$															
			S.D.															
	?	43	$\overline{X}$	36.28	52.73	35.33	43.75	94.47	85.70	80.69	88.52	87.60	92.04	85.78	88.89	4.00	2.58	2.29
			S.D.	15.72	11.83	12.21	7.25	10.64	27.09	24.34	19.65	23.16	16.77	29.48	24.42	2.37	1.10	0.73
College of Enrollment	NR	0	$\overline{X}$															
			S.D.															
	LD	225	$\overline{X}$	35.08	52.14	35.37	44.06	93.37	85.41	89.40	90.54	86.49	89.74	81.79	93.06	3.35	2.47	2.02
			S.D.	15.72	11.90	9.52	7.40	13.44	23.71	17.74	18.56	24.21	19.43	30.70	17.39	2.47	1.14	0.72
	A+S	42	$\overline{X}$	32.36	56.46	39.75	45.35	96.39	86.24	82.21	85.01	88.58	89.90	78.43	90.46	3.48	2.52	2.15
			S.D.	15.57	12.73	10.67	7.60	11.62	22.72	20.49	21.51	21.06	20.54	34.20	21.57	2.86	1.33	0.79
	HRS	11	$\overline{X}$	34.93	55.37	37.10	43.82	98.92	81.05	79.82	94.68	86.57	98.33	99.73	95.45	2.91	2.18	2.18
			S.D.	10.84	6.47	8.09	7.56	2.11	17.50	18.31	10.90	21.64	5.55	0.90	8.71	1.22	0.98	0.54
	PE	13	$\overline{X}$	35.38	55.69	41.96	44.95	85.87	72.38	83.31	86.31	72.73	88.96	73.39	86.86	4.00	2.46	2.19
			S.D.	12.98	12.12	10.31	8.56	19.84	32.82	19.16	22.22	38.17	26.77	36.67	21.84	2.42	1.27	0.88
	OTH.	56	$\overline{X}$	34.92	53.02	38.96	45.58	96.73	88.76	86.26	90.29	90.79	90.26	80.70	91.77	2.91	2.11	1.95
			S.D.	11.48	10.59	11.30	8.48	8.37	15.74	22.58	21.37	20.46	22.11	28.18	22.20	1.93	1.06	0.56
Sex	NR	0	$\overline{X}$															
			S.D.															
	M	112	$\overline{X}$	34.80	54.02	40.89	45.76	93.22	89.09	87.01	89.45	86.14	91.73	85.53	93.51	2.08	2.37	2.02
			S.D.	15.16	11.59	10.31	7.74	14.78	19.52	19.85	19.99	25.88	18.79	28.11	15.69	2.53	1.20	0.77
	F	235	$\overline{X}$	34.70	52.57	34.82	43.87	94.63	83.68	87.72	89.97	87.30	89.30	79.52	91.84	3.41	2.43	2.04
			S.D.	14.69	11.78	9.42	7.53	11.71	24.04	18.80	19.11	23.00	20.55	31.58	20.00	2.35	1.13	0.68

APPENDIX J (Continued)

Categories																		
		N		EC	EI	OC	OI	TO	TS	TV	TP	TK	TC	TT	TE	TG	CG	CT
Reason for taking course			X̄															
	NR	0	S.D.															
			X̄	35.72	52.57	35.51	43.85	93.01	83.46	87.35	88.00	85.39	88.28	77.09	91.44	3.45	2.45	2.04
	REQ	220	S.D.	15.43	11.62	9.76	7.37	13.88	24.90	18.97	21.10	25.62	22.19	33.22	19.70	2.50	1.20	0.74
			X̄	33.30	54.53	39.07	45.41	96.16	88.24	86.72	92.66	88.77	93.46	90.28	94.03	3.08	2.36	2.03
	EL	114	S.D.	14.03	11.99	10.52	7.56	10.58	18.76	20.18	16.01	21.47	15.22	22.44	17.44	2.30	1.10	0.68
			X̄	30.65	47.99	38.31	47.09	96.42	93.91	96.55	95.22	96.65	91.00	78.14	93.86	2.85	2.15	1.95
	OTH.	13	S.D.	8.87	9.38	9.04	11.41	8.09	11.30	6.60	10.79	5.21	14.26	31.68	10.43	1.92	0.69	0.46
*			X̄	39.16	57.69	46.94	44.81	84.40	95.20	66.50	91.15	100.00	85.80	53.90	100.00	6.00	4.00	2.30
	NR	2	S.D.	1.19	19.29	15.63	0.28	22.06	2.40	23.90	3.32	0.0	0.0	65.20	0.0	0.0	0.0	0.24
			X̄	39.33	48.78	29.67	52.85	99.65	98.43	95.75	100.00	96.15	97.63	98.77	100.00	2.17	2.33	1.75
	YES	6	S.D.	6.71	8.23	8.69	13.27	0.72	2.45	10.41	0.0	9.43	5.80	1.96	0.0	1.60	1.03	0.27
			X̄	36.72	44.33	34.75	53.09	94.14	85.13	87.47	89.61	86.68	89.98	81.32	92.20	3.31	2.40	2.04
	NO	339	S.D.	10.18	7.50	14.89	11.73	12.83	22.98	19.16	19.55	24.14	20.20	30.59	18.90	2.42	1.15	0.72
**			X̄	38.32	71.33	58.00	45.00	100.00	93.50	49.60	93.50	100.00	85.80	100.00	100.00	6.00	4.00	2.47
	NR	1	S.D.															
			X̄	34.45	45.51	30.91	55.25	98.35	91.27	87.87	98.14	92.98	97.71	79.47	95.03	3.19	2.41	1.92
	YES	27	S.D.	7.48	6.99	8.18	12.03	5.98	15.90	22.22	3.49	15.52	5.67	33.20	15.88	1.88	0.93	0.54
			X̄	36.97	44.31	34.98	52.88	93.80	84.90	87.58	89.08	86.37	89.45	81.57	92.13	3.30	2.40	2.04
	NO	319	S.D.	10.30	7.56	15.18	11.70	13.15	23.26	18.78	20.02	24.49	20.67	30.44	18.96	2.45	1.17	0.72

*Previous course work with instructor.

**Knowledge of instructor's methods.

REFERENCES

Anikeef, A. M. "Factors affecting student evaluation of college faculty members," Journal of Applied Psychology, 37, 1953, 458-460.

Bendig, A. W. "A preliminary study of the effect of academic level, sex, and course variables on student rating of psychology instructors," Journal of Psychology, 34, 1952, 2-126.

Bendig, A. W. "Relation of level of course achievement of students, instructor and course ratings in introductory psychology," Educational and Psychological Measurement, 13, 1953, 437-488.

Blum, M. L. "An investigation of the relation existing between students' grades and their ratings of the instructors' ability to teach," Journal of Educational Psychology, 27, 1936, 217-221.

Bridges, C., Greenwood, G., and Ware, W. "Student evaluation of teacher behavior," Gainesville, Florida, 1971. Mimeographed questionnaire.

Brown, A. F. "Reactions to leadership," Educational Administration Quarterly, 3, 1967, 62-73.

Brown, K. "Regressed gain program--1970 version--written for FT-2," Gainesville, Florida, 1970. Unpublished computer program.

Caffrey, B. "Lack of bias in student evaluation of teachers," Proceedings of the 77th annual convention of the American Psychological Association, 4, 1969, 641-642.

Clark, K. E., and Keller, R. J. "Student ratings of college teaching," in A university looks at its program. Ed. R. A. Eckert. Minneapolis: University of Minnesota Press, 1954.

Cohen, J., and Humphreys, L. G. "Memorandum to faculty," Department of Psychology, University of Illinois, 1960. Mimeographed memorandum.

Cooley, W. W. and Lohnes, P. R. Multivariate data analysis. New York: John Wiley & Sons, Inc., 1971.

Costin, F., Greenough, W. T., and Menges, R. J. "Student ratings of college teaching: Reliability, validity, and usefulness," Review of Educational Research, 41, 1971, 511-535.

Dixon, W. J. (ed.). BMD Biomedical computer programs. Berkeley: University of California Press, 1971.

Downie, N. W. "Student evaluation of faculty," Journal of Higher Education, 23, 1952, 495-496, 503.

Echandia, P. P. "A methodological study and factor analytic validation of forced-choice performance ratings of college accounting instructors," Dissertation Abstracts, 25, 1964, 2605-2606.

Eckert, R. E. "Ways of evaluating college teaching," School and Society, 71, 1950, 65-69.

Elliott, D. H. "Characteristics and relationships of various criteria of college and university teaching," Purdue University Studies in Higher Education, 70, 1950, 5-61.

Gage, N. L. "The appraisal of college teaching," Journal of Higher Education, 32, 1961, 17-22.

Garverick, C. S., and Carter, H. D. "Instructor ratings and expected grades," California Journal of Educational Research, 13, 1962, 218-221.

Gibb, C. A. "Classroom behavior of the college teacher," Educational and Psychological Measurement. 15, 1955, 254-263.

Gustad, J. W. "Evaluation of teaching performance: Issues and possibilities," in Improving college teaching, Ed. C. B. T. Lee. Washington, D. C.: American Council on Education, 1967.

Guthrie, E. R. "The evaluation of teaching," Educational Record, 30, 1949, 109-115.

Guthrie, E. R. The evaluation of teaching: A progress report. Seattle: University of Washington Press, 1954.

Halpin, A. and Winer B. "A factorial study of the leader behavior descriptions," in Leader behavior: Its description and measurement. Eds. R. Stogdill and A. Coons. Columbus, Ohio: Ohio State University Bureau of Business Research, 1957.

Heilman, J. D. and Armentrout, W. D. "The rating of college teachers on ten traits by their students," Journal of Educational Psychology, 27, 1936, 197-216.

Hemphill, J. and Coons, A. Development of the leader behavior descriptions questionnaire, in Leader Behavior: Its description and measurement. Eds. R. Stogdill and A. Coons. Columbus, Ohio: Ohio State University Bureau of Business Research, 1957.

Hemphill, J., Halpin, A. and Winer, B. J. The leadership behavior of the airplane commander. Columbus, Ohio: Ohio State University Research Foundation, 1952.

Hudelson, E. "The validity of student rating of instructors," School and Society, 73, 1951, 265-266.

Kirk, R. E. Experimental design: Procedures for the behavioral sciences. Belmont, California: Brooks/Cole Publishing Company, 1968.

Lovell, G. D., and Haner, C. F. "Forced-choice applied to college faculty rating," Educational and Psychological Measurement, 15, 1955, 291-304.

McKeachie, W. J. Teaching tips: A guidebook for the beginning college teacher (6th ed.), Lexington, Massachusetts: D. C. Heath, 1969.

McKeachie, W. J., Lin, Y., and Mann, W. Student ratings of teacher effectiveness: Validity studies. American Educational Research Journal, 1971, 8, 435-445.

Mann, W. R. "Changes in the level of attitude sophistication of college students as a measure of teacher effectiveness," Dissertation Abstracts, 29, 1969, 2443-2444.

Nunnally, J. C. Psychometric theory. New York: McGraw-Hill Book Company, 1967.

Rayder, N. F. "College student ratings of instructors," Journal of Experimental Education, 37, 1968, 76-81.

Remmers, H. H. "The relationship between students' marks and students' attitudes towards instructors," School and Society, 28, 1928, 759-760.

Remmers, H. H. "To what extent do grades influence student ratings of instructors?," Journal of Educational Research, 21, 1930, 314-316.

Remmers, H. H. "Appraisal of college teaching through ratings and student opinion" in 27th yearbook of the National Society of College Teachers of Education. Chicago: University of Chicago Press, 1939.

Remmers, H. H. Manual of instructions for the Purdue Rating Scale for Instructors (Rev. ed.). West Lafayette, Indiana: University Book Store, 1960.

Remmers, H. H., and Elliott, D. N. "The Indiana College and University Staff-Evaluation Program," School and Society, 70, 1949, 168-171.

Rubenstein, J., and Mitchell, H. "Feeling free, student involvement, and appreciation," Proceedings of the 78th annual convention of the American Psychological Association, 5, 1970, 623-624.

Russell, H. E. Interrelations of some indices of instructor effectiveness. Doctoral dissertation, University of Pittsburg, 1951.

Russell, H. E., and Bendig, A. W. "Investigation of the relations of student ratings of psychology instructors to their course achievement when academic aptitude is controlled," Educational and Psychological Measurement, 13, 1953, 626-635.

Spencer, R. E. The Illinois course evaluation questionnaire: Manual of Interpretation (Rev. ed.). Research report No. 270. Champaign, Illinois: University of Illinois, Office of Instructional Resources, Measurement and Research Division, 1968. Mimeographed.

Stewart, C. T., and Malpass, L. F. "Estimates of achievement and ratings of instructors," Journal of Educational Research, 59, 1966, 347-350.

Stogdill, R. M. Individual behavior and group achievement. New York: Oxford University Press, 1959.

"Student report on classroom teaching," College of Education, University of Florida, no date. Mimeographed.

Thorndike, R. L. and Hagen, E. Measurement and evaluation in psychology and education (2nd ed.), New York: John Wiley and Sons, 1961.

Tracy, R. J. and Rankin, E. F. "Methods of computing and evaluating residual gain scores in the reading program," Journal of Reading, 8, 1967, 363-371.

Treffinger, D. J. and Feldhusen, J. F. "Predicting students' ratings of instruction," Proceedings of the 78th annual convention of the American Psychological Association, 5, 1970, 621-622.

Veldman, D. J. Fortran programming for the behavioral sciences. New York: Holt, Rinehart and Winston, Inc., 1967.

Voeks, V. W., and French, G. M. "Are student-ratings of teachers affected by grades?," Journal of Higher Education, 31, 1960, 330-334.

Walker, B. D. "An investigation of selected variables relative to the manner in which a population of junior college students evaluate their teachers," Dissertation Abstracts, 29, 1969, 3474.

Walsh, W. B. "Validity of self-report," Journal of Counseling Psychology, 14, 1967, 18-23.

Weaver, C. H. "Instructor rating by college students," _Journal of Educational Psychology_, 51, 1960, 21-25.

Yonge, G. D., and Sassenrath, J. M. "Student personality correlates of teacher ratings," _Journal of Educational Psychology_, 59, 1968, 44-52.

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John Edward Stone was born in Louisville, Kentucky, on October 11, 1942. He attended Trinity High School in Louisville and received a diploma in June, 1960. His professional training includes one and one-half years of study at the University of Dayton, five years at the University of Kentucky, and three years at the University of Florida. He holds a bachelor's degree (1966) and master's degree (1968) both from the University of Kentucky.

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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Education.

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